

# THE AUTOMOBILE

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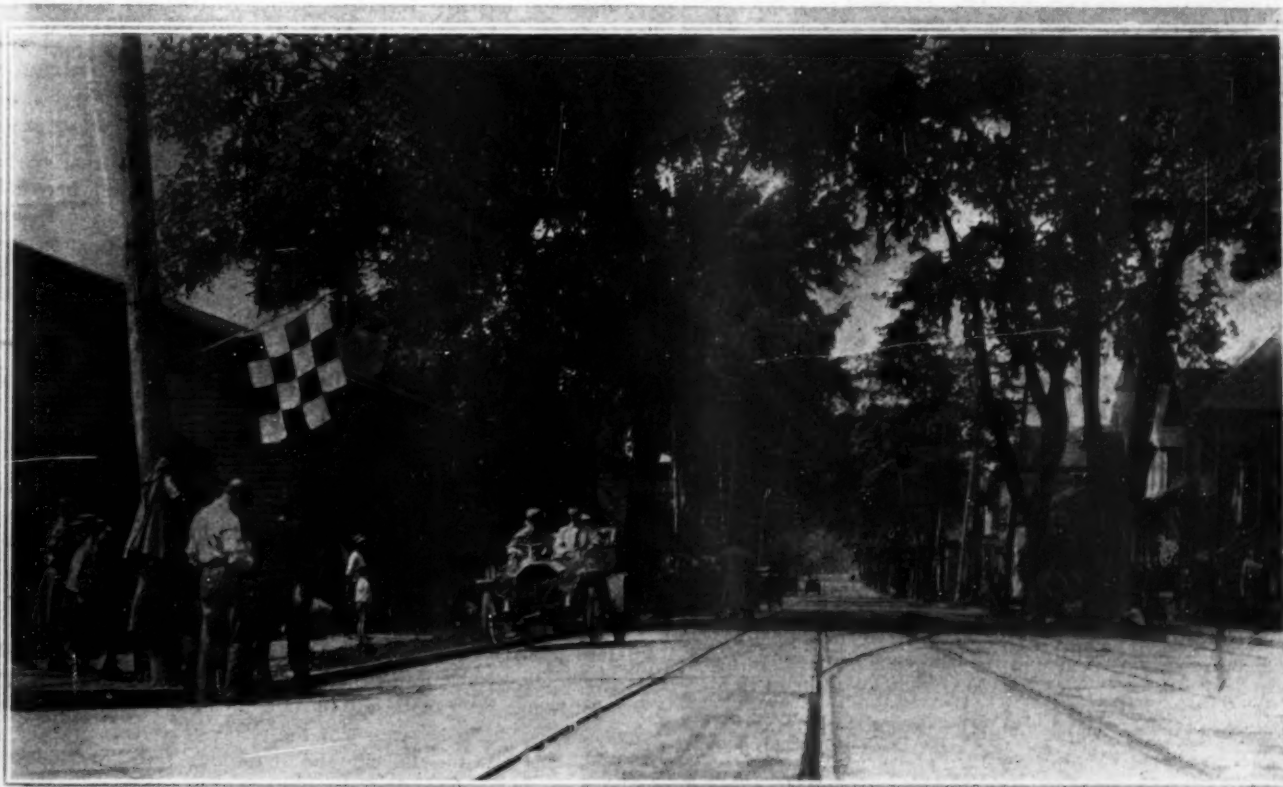
## THE THIRD ANNUAL A. A. A. TOUR

WHEN the eleven hundred odd miles from Buffalo to Bretton Woods will have been completed by the participants in the Third Annual Tour of the American Automobile Association, the American automobile will have demonstrated in great degree the extent of its capabilities and will have met the extraordinary demands, not of an ideal tour such as one can make in France, but of a typical American road journey, with its varied highways, ranging from fairly excellent down to very bad—most of it very bad.

Though primarily organized for pleasure driving, the greater part of the cavalcade that started from Buffalo on the morning of July 12 are engaged in the second contest for the Charles J. Glidden touring trophy, and the struggle for its possession is taking place under more exacting conditions than was the case a year ago when Percy P. Pierce excelled in the run from New York to Bretton Woods. This time the route is divided into forty-four

checking units or periods, and the driver who comes nearest to maintaining the pre-arranged schedule each day will receive the lowest penalization and will therefore become the winner of the trophy. Each day every driver receives a card informing him of the exact schedule, which he must observe faithfully to escape penalization. The checking points are usually 25 miles apart.

For those who desired to participate in the tour and still did not care to place themselves under the rigid rules of the Glidden contest, there is a handsome prize in bronze offered by Chairman Paul H. Deming of the Touring Committee for the driver who makes the best regularity record, repairs and adjustments in garages being permitted though forbidden to the Glidden strivers. To the A. A. A. club supplying the most entries in proportion to its membership, the Board of Directors of the national body will give a prize. The Crawford Notch climb will be a special event.



TYPICAL INCIDENT OF THE TOUR.—JOHN L. SNOW, PEERLESS, ARRIVING AT THE FONDA CHECKING STATION.



AT 7 O'CLOCK ON THE MORNING OF JULY 12 THE FIRST CAR LEFT THE AUTOMOBILE CLUB OF BUFFALO HEADQUARTERS.

Technically the Third Annual Tour started from Chicago on July 5, and a small party of Westerners followed a route that



SECRETARY LEWIS, A. C. B., PREPARES HIS REO FOR THE PARADE.

embraced Goshen, Toledo, Cleveland, and Erie, reaching Buffalo July 10. July 11 was rendezvous day at Buffalo, and all prepara-



PERCY PIERCE, THE 1905 WINNER, READY FOR THE 1906 EVENT.

tions were made for the start on the following morning, the Automobile Club of Buffalo acting in the capacity of host to the assembled automobilists. Buffalo was designated as the start of the contest for the Glidden trophy owing to the fact that Mr. Pierce, the 1905 winner, is a resident of Buffalo.

Chairman Deming; Secretary Gorham, Superintendent Tucker, and the other officials labored industriously to gather in the odds and ends at the eleventh hour, and automobilists swarmed throughout Bisontown. Charles J. Glidden, the round-the-world tourist, appeared on the scene and added to the importance of the event. A calling of the roll of "Who's Who in Automobiling" would have revealed the fact that nearly all the leaders in the pastime and industry, including numerous pioneers, were on the ground.

### THE FIRST DAY OF THE TOUR.

By ARTHUR N. JERVIS.

AUBURN, July 12.—Of the seventy-one automobiles that started from Buffalo this morning and successfully reached here this afternoon, fifty-one contested for the Glidden trophy, five were designated as service cars, and the fifteen others will figure more or less as pleasure travelers, except that incidentally several of them will decide the ownership of the Deming trophy. Only five cars had mishaps that delayed them sufficiently to spoil their clean score.

Splendid weather favored the tourists to-day. The country was in its greenest July growth with no sun-seared foliage. The scenery relieved the mind while the body was getting tired. There were a lot of steep hills to go up and down and some wretched roads to be traveled, roads which would make any one a good roads enthusiast after one ride over them in an automobile, yet even the worst highways, those from Canandaigua on through Geneva, Seneca Falls and the Montezuma swamps, were in fair condition for them.

The mishaps of the day included several of the sort that happen to automobiles at various times on various roads. One car broke a spring, another bent an axle and a couple were ditched. It is a wonder that every car did not break a spring and an axle as well and also get ditched in some of the places traversed.

Webb Jay was the unlucky one of to-day's run. At Hopewell Center, 93 miles from Buffalo, too great hurry in taking on a supply of gasoline brought about a fire which damaged the car beyond immediate repair. Adams, the mechanic, was burned

trying to extinguish the flames, and expressman Jim Smith, who was delivering the gasoline, was somewhat scorched.

Joseph Mechaley, driving a 20-horsepower Pope-Toledo, went into a ditch near Waterloo, and J. H. Becker, in a 30-horsepower Elmore, got into the same kind of a difficulty, but neither was injured. Percy Pierce risked spoiling his chances by stopping to pull the Elmore back on the road.

Benjamin Knowles, driving a 35-horsepower Locomobile, was the first to start, at 7 o'clock, from Buffalo, and J. G. Cassatt, driving a White steamer, was the last to leave, at 9:42 A. M. The six-cylinder Great Arrow, the 1907 model of the Pierce car, started after all the contestants had left, serving as a combination press and official car. Tom Fetch, the transcontinentalist, also did similar service with a 24-horsepower Packard. The Knox baggage wagon came through in fine shape.

### FROM AUBURN TO UTICA.

UTICA, July 13.—Second days of automobile runs, like second days of many other forms of amusement and sport, have the characteristics of being more or less devoid of special interest. Perhaps this is because there is so much enthusiasm manifested at the start that it is but natural that it should be succeeded by a lull; anyhow, the second day's run was one of quietude. Sixty-two automobiles started from Auburn at 7 o'clock in the morning, and fifty-nine of them finished the day at Utica, after having traveled 76 miles on a running schedule of 4 hours 2 minutes.

Beautiful weather continued to favor the tourists, and as far as climatic conditions were concerned, no improvement could be asked for. The roads were not exactly ideal, being rough and lumpy the greater part of the way. The checking system worked smoother to-day, as the committee decided to allow checkers to answer a contestant when he asked how late or how early he was, and it helped a lot to smooth off the rough edges. At the committee meeting held here to-night it was decided that all entrants who had lost one or two points by misjudging the time at the first checking station on Thursday should have those points restored upon furnishing satisfactory proof that they were standing in line in the proximity of that station before passing it.

Mr. Glidden, the donor of the trophy, addressed the assembled contestants twice to-day, once before breakfast this morning, and again to-night after dinner. He said that the great virtue in having competing cars run on a schedule was that it prevented racing with one another, or one against all. In the matter of the implied hardships in stopping to eat, Mr. Glidden said it was no



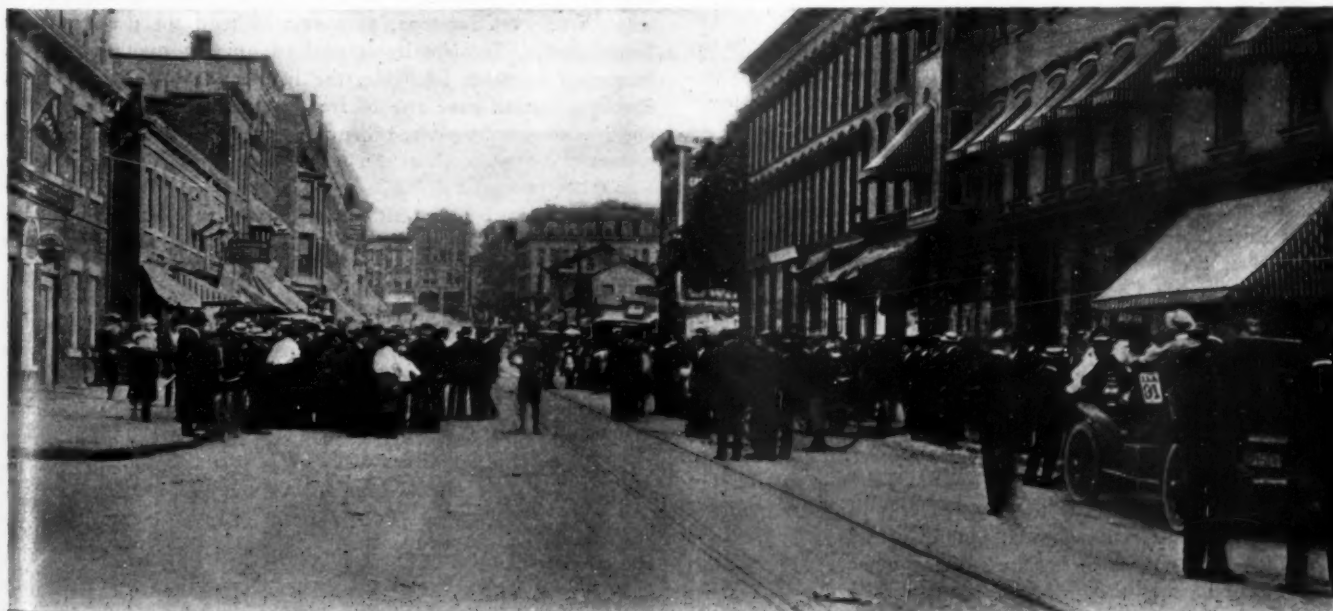
THE KNOX BAGGAGE WAGON IS A FEATURE OF THE TOUR.

hardship for men and women to travel under a hot sun for from four to seven hours without stopping for a meal, and thought



THIS OLDSMOBILE SUPPLIES ALMOST ANYTHING.

it entirely consistent that such a condition should prevail in a pleasure tour of this character. Automobiling is not tiddledewinks.



AUBURN WAS EXCEEDINGLY LIVELY WHEN THE TOURISTS BEGAN TO ARRIVE THURSDAY AFTERNOON.



IN FRONT OF BAGGS' HOTEL, UTICA, THE FRIDAY NIGHT STOP.

### THROUGH THE MOHAWK VALLEY.

By ROBERT BRUCE.

SARATOGA, July 14.—The unexpected opportunity to ride as a passenger in No. 53, the 30-35-horsepower Cleveland, entered by Dexter Fairbanks, of Chicago, under the colors of the Cleveland Automobile Club, was accepted with alacrity, and the result was one of the pleasantest of the many touring experiences enjoyed by the writer. "Wally" Owen was the driver. Weather conditions for this, the third day of the tour, were nothing short of ideal, and the 95 miles were covered with mathematical accuracy at each of the four "controls," of which Saratoga was the last. Very little trouble was experienced by any entrant, and the pleasure element was kept to the fore throughout the day.

The route through the Mohawk Valley—famous alike for its superb scenery and its many miles of narrow, bad roadways—was in exceptionally favorable condition. Every entrant was ready for the continuation of the trip, for Utica was reached for dinner yesterday by practically the entire party.

Promptly at 7 A. M. the first bunch got off, already preceded by the "Pathfinder," and a few of the independent flying squadron. Our No. 53 pulled out of the official garage on Bleecker street at 8:17, amid more automobile excitement than Utica is accustomed to at one time. The caravan divided itself at the start between the north and south sides of the Mohawk river, coming into the same line at Herkimer, sixteen miles out. The north side route was the one given in the official schedule, but the location of the principal garage was more convenient to the south side and there was no detailed restriction as in past years; competitors were simply expected at the first intermediate checking station, Little Falls, 1 hour 25 minutes from the time of leaving Utica.

Most of the cars, ours included, made this run of twenty-three miles in about an hour, waiting just west of the checking station at Little Falls until each individual time was up, meanwhile looking over the machines, making adjustments, etc., which was required to be done in the total running time, not at rest in the garage. Practically every home in central New York has rural free delivery, and No. 53 passed three carriers in the first hour out of Utica. We fairly flew over the one stretch of good macadam midway between Deerfield and Herkimer, but had to run cautiously along the New York Central past Frankfort and Ilion. Shortly afterward, bearing left uphill, away from the four tracks, the beautiful valley town of Herkimer spread out before us as if inviting us to stay longer and get acquainted instead of pushing through without a stop.

At Little Falls the real Mohawk Valley opens up, and right here it may be said that whoever has not seen the stretch between Little Falls and Amsterdam from the highway has scarcely seen it at all. Not much road description is necessary, for it is



MR. GLIDDEN, CHAIRMAN DEMING, WEBB JAY, SECRETARY GORHAM.

always the main thoroughfare, easily distinguished from the numerous branch lines, which run principally north. Through the heavy piece of Beardsley's woods, in the vicinity of East Creek, a little mud was encountered (the overarching branches keeping out the sun), but through St. Johnsville, Nelliston, Palatine Bridge, Sprakers and Yosts, nothing hindered an average of fast time. We turned right over the bridge just west of Fonda and pulled up as close as possible to the checking station for another twenty minutes' wait before we could be "officially" there.

Good roads, the pleasure of traveling over which is seriously interfered with by the numerous bad grade crossings of the high-speed trolleys, extend nearly all of the way from Fonda over Tribe's Hill to Amsterdam. Spring street, by which the official route led into Amsterdam, was badly torn up for the laying or repair of sewers; and although a much better entrance (Clinton and Division streets) had apparently been overlooked by the pathfinders, all managed to get by the various obstructions. A right and left turn carried us quickly through this busy little manufacturing city, with a fair stretch of macadam beyond.

At the end of this macadam the direction and character of the route radically changed, turning left up a series of very difficult short grades. By so doing the valley levels are left behind and the steep ridge forming the northern boundary of same was crossed into a thinly settled and somewhat rough agricultural country. This provided a short cut from Amsterdam and points west thereof to Saratoga, as compared with the usual way via Schenectady. Incidentally it enabled quite a number of those interested to place Glenville, the listing of which as the third checking station gave rise to frequent inquiry as to the location and identity of the place. Glenville is a four corners, with a few houses and a white church, where left turn is made for Ballston. For miles beyond this place speed was held down by numerous bumps, some of them of serious character, including ditches across the road to carry away the surplus water from the adjacent farms.

Once past this region of dangerous bumps we ran into Ballston at increased speed, which was in some cases necessary to make up lost time and reach Saratoga on schedule. Running into Church avenue, Ballston, all road troubles were ended, however, the through line via Milton avenue across two bridges into Saratoga avenue being well defined and in good condition. Once on Saratoga avenue the way is plain and unmistakable to the lower edge of the famous Spa, though it is by no means straight, passing meanwhile a number of the springs and Geysers railroad station. Finally making a right bend to intersection of Broadway, and left down Broadway, sooner almost than we were aware the now familiar flag of the checking station showed the last mile for the day completed.

As usual, we waited a few minutes for our particular moment to cross the line, although the margin of time was less than at either Little Falls, Fonda or Glenville. This wait seemed longer than it really was because it was approaching 2 P. M., and we had already forgotten the early breakfast at Utica. At 1:51 P. M. No. 53 crossed the tape with its third perfect daily record.

There were the usual few belated arrivals, including the last patrol cars and the Knox baggage truck, which reached headquarters about 4 P. M., amid no little applause from the verandas. This officially ended the day, leaving most of the afternoon and Sunday for recreation at Saratoga.

Throughout the entire run there was an outpouring of popular interest exceeding anything the writer has heretofore witnessed. Business (principally agriculture) and housework seemed likewise suspended in the Mohawk Valley hamlets, and, being Saturday, of course schools were not in session; so the entire population took to the roadsides and the house steps. It would be difficult to find more enthusiastic spectators, and there was a mutual hand-waving from beginning to end of the journey. We passed through Amsterdam during the noon hour and several thousands of operatives from the mills thronged the streets to see the automobile caravan go by. Rushing up the short, steep grades just east of Amsterdam, some young ladies tossed candy into the cars, which was appreciated.

At one point a large gang of Italian railroad laborers saluted, "presenting arms," which in this case were their picks and crow-bars—an unique sight. One of the farmers near Fonda had taken his bugle into the field, which lined the roadway, and used it in saluting each passing car. Nor should the old gentleman just beyond Glenville, who stood by the roadside with uplifted cane to warn each approaching car of the bad bumps ahead, be forgotten. In the aggregate quite a number of cars are owned in the Mohawk Valley towns, and it is safe to say that four out of five of these were parked along the roadsides as we went by.

To give some idea of the schedule: leaving Utica at 8:17 A. M. we were officially due at Little Falls at 9:52; at Fonda, 11:29; at Glenville, 12:35, and Saratoga, at 1:51, making the elapsed time 5 hours 34 minutes, of which perhaps an hour all told was spent waiting to enter the intermediate controls. This had been figured out in advance to average from 16 1-2 to 18 miles per hour. The actual average in nearly all cases slightly exceeding 20 miles per hour. There was a spectacular scene when one of the big cars which had been delayed from some cause came into the Glenville control at top speed, and went well past (on the straight road where a left turn had to be made), in a desperate effort to save a few seconds of time.

It was a pleasure to ride in the car piloted by "Wally" Owen, a courageous but very careful operator. Not even a chicken (and they are plenty in the Mohawk Valley) was touched during the

day, although we did run against a large, vicious bulldog that insisted on disputing our right of way near Fonda. A large, more powerful car approaching from the rear was always cheerfully given opportunity to pass, and no car in trouble was passed without an offer to stop and help; this happened three times during the day. Only in one instance was half of the road denied to us, and that by a foul-mouthed specimen of driver who grinned from ear to ear when it was necessary while at speed to lift the car out of its natural trackage in order to get around. However, while these instances are disagreeable, they do not dismay the experienced driver.

It was plain that in the present arrangements for the Glidden tour very satisfactory touring conditions have been met. The old non-stop contests seem at least a decade away; the scheme of penalizing stops, particularly. This had two bad features, first, the temptation to take risks rather than stop; second, the frequent abuse of the machine rather than incur the penalty, which in some cases ruined a fine motor. Under the present conditions it is allowable to do any sort of work on the competing cars—during the running time only—the effect of which is that careful supervision which makes for the best results. In most cases the competing cars will end this long journey in the same good condition in which they started out.

Looking over the performances so far made, and considering that the subsequent itinerary leads to Montreal, past Lake Champlain and along the Chambly canal to Quebec by the little known route along the upper St. Lawrence river, and to Rangeley Lake via the Maine wilderness, one can only wonder what has become of the uncertain things driven in the old-time endurance runs. The second wonder is how these events of three, four and five years ago were carried through at all; automobile touring has certainly come upon an era of better things.

### FROM SARATOGA TO ELIZABETHTOWN.

ELIZABETHTOWN, July 16.—After a Sunday of rest in Saratoga the cavalcade started out on its fourth day of touring, seventy-two cars participating, three pleasure seekers having joined at the Spa. From Saratoga the route led to Elizabethtown, ninety-four miles through the glories of the great North Woods. The roads generally were good, and everyone enjoyed the scenery and began to declare it was a pleasure tour after all. Then on the latter part of the trip they began to find places where cars were ditched or broken, and then they said it was a real contest.

Incidentally, the tour ran up against a portion of the United States army, which caused everybody to travel seven miles out of the way. The army men comprised a regiment of the Fifth Infantry, from Plattsburg, under command of Col. C. D. Cowles, which was marching 200 miles to Albany. In consequence the



"No. 13."—W. C. WHITE AND R. H. JOHNSTON, WITH CONFETTI.



THE SIX-CYLINDER NATIONAL ON THE ROAD IN FULL CRY.



C. W. KELSEY, MAXWELL, AT THE GLENVILLE CHECKING POINT.

checking is all out of gear to-night. No one arrived on time, but the committee of the contest decided to allow an hour and a quarter to all for the extra mileage, which let in a whole lot with a clean score.

The accidents of the day were both sensational and picturesque. The baggage wagon slid into a ditch, where it will probably remain until morning. Secretary Gorham was one of the stranded, his car suffering from a break in its oiling mechanism. J. M. Morrison broke a wheel, and Walter White was equally unlucky. George O. Draper's Packard skidded at a sharp turn and the car hung over the embankment in a dangerous manner and considerable effort was required to pull it back on the road. C. G. Ridgeway's Peerless got into a quagmire, Elmer Haynes was among the ditched, and there were numerous other mishaps of a more or less serious nature.

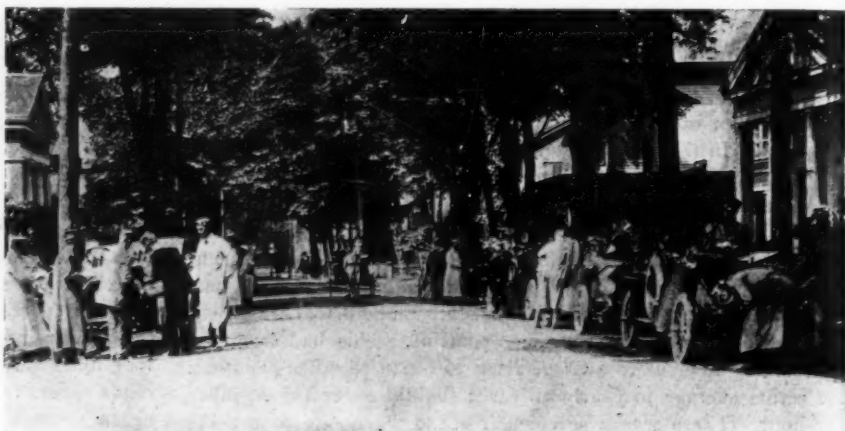
### AS SEEN BY A FRENCH WRITER.

By GEORGES DUPUY.

ELIZABETHTOWN, July 16.—Across the most capricious, undulating, glimmering, beautiful landscapes, on the gray, endless ribbon that cuts the tender green of hills and vales, the American cars go swift, smooth, and powerful. They go, they roar, they bound, these road locomotives, always replacing their four tires in the parallel ruts of the narrow way. In no part of France do the automobilists find such roads and such configurations of country, and I do not hesitate to say that certain high-

tion as he did his Packard. The scoundrel made me positively swear with delight! There was an awful depression hidden by water. "Here, quick, on the left. . . Look out!" cried I, and in a twinkle we had passed the spot, without feeling anything, only perhaps a slight rocking on the rear springs.

The old Napoleon warriors used to say with emotion, a cen-



THE STOP AT FONDA WAS IN A PICTURESQUELY SHADED STREET

tury ago: "We were with Him in the Italian Alps." Well, to-day I feel proud to say, after the same old fashion, "I was with Percy Pierce in the Adirondacks!"

Shall I tell you also how the two Stearns, like strong, eager beasts, devoured Old Crow Hill on the high gear? And the solitary Darracq, masterly driven by S. B. Stevens, who, with that same regular, indifferent gait of his, was sharply contouring the edges of the precipices, ahead of us, above Schroom Lake?

And what about the little "Confetti Maxwell" Speedster, which, like *Petit Paucet* in the great Perrault tales, showed us the right way all the time by dropping, far ahead of the big squadron, long, curly bands of paper? The tiny white cobblestones, in the French fable, enabled the cunning child to return home; the narrow white ribbons of paper, in our story, led us to-night in a delightful vale, full of flowers and gurgling streamlets, and which was certainly haunted by fairies in days of yore.

But I shall not dwell myself on a fastidious description of the dirty, greasy roadsters, halting at the checking stations, in the burn-



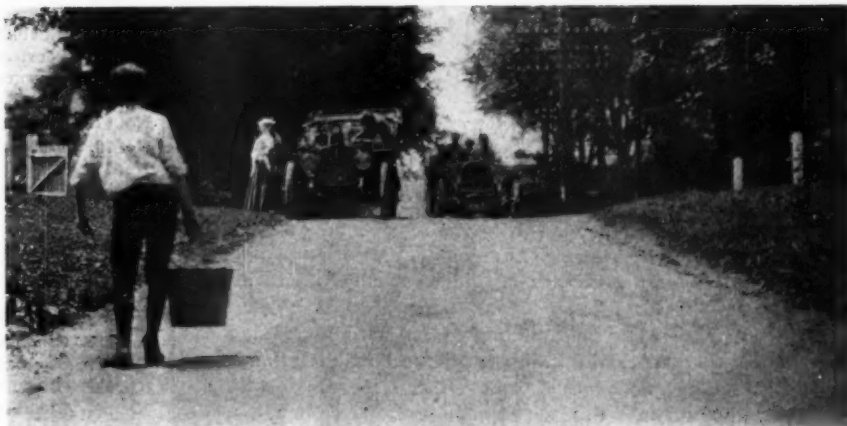
FOR MANY MILES THE TOURISTS PARALLELED THE RAILROAD TRACKS.

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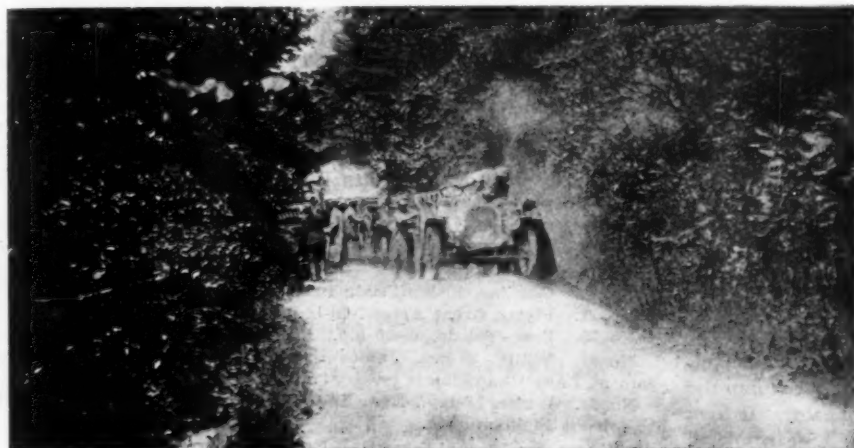
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ing sun, nor tell of the dusty-faced ladies or the brigand-looking masked drivers who were proud to say at the finish, "Well, old boy, my car has withstood the atrocious journey in a most elegant fashion!" And the thus addressed "old boy" would reply, while removing his goggles, "Same here!" I recognize that in to-day's stage, the very hardest so far, we have been somewhat "rocked"; but readers of these lines should understand that the actual schedules for the first seven days of the A. A. A. tour have been purposely established to demand of the cars unusual efforts and speeds. Now the sensible tourist visiting these wonderful regions would not, of course, attempt any such steeplechasing, which would simply ruin the enchantment of traveling up and down, from a still, glazed lake to a bald dome, admiring at the same time the charmingly varied panorama spreading itself out to the remotest horizon.

If you have a good, reliable car, like the majority of these resting to-night under the trees of this beautiful valley, you will also, like ourselves—and better still—enjoy the delightfully tired feeling occasioned by the vivifying breezes charged with all the aroma



A ROADSIDE SCENE THAT WAS FREQUENTLY REPEATED EN ROUTE.



ON THE UNEXPECTED HILL NEAR AMSTERDAM WHERE MANY CARS WERE STALLED.

of the wild plants of the mountains. You will inhale the invigorating ozone of the sombre pine; you will gain a big appetite; you will know, if you are a victim of insomnia, the profound, restful sleep. Lastly, you will know what automobilism really means and feel proud of your country's youngest industry.

### FROM ELIZABETHTOWN TO CHAMPLAIN.

LAKE CHAMPLAIN, N. Y., July 17.—As it progresses the tour becomes both more pleasant and more serious. It has been a day where the rugged splendors of the Adirondack forest primeval appealed to the eye and soul sense at every moment. The contestants and the tourists have been riding through a region which all agree is "God's country," though some are from Chicago and others from Boston. The delights of the scenic glory have been equaled only by the perilous places encountered on the roads—places where the sand is crumbly on the edge of ravine or ditch. There is no doubt about the affair being pleasant and no doubt about its being a severe test of the efficiency of the drivers and the cars. Altogether the com-

bined tour and contest is scoring a remarkable success. The contest appears to have become irrevocably associated with the annual tour of the A. A. A., yet the mating is settling into compatibility. It is beginning to seem almost a happy union, although at first there was grumbling and some criticism. It required several days to get a fair estimation of it. It seemed foolish in spots and unfair in others, but there is now no doubt about its being the biggest affair of the sort that ever occurred in the United States. Mr. Glidden, who is riding in a White steamer because his own Napier was not shipped to him on time, expresses himself as entirely satisfied, and the committeemen are beginning to confront all comers with smug countenances.

Whether or not the long run will evolve indisputably a winner of the Glidden trophy seems now to be a question. As yet there are too many cars who are tied with perfect scores. Yet the journey now is leading into a country where those with perfect scores are apt to be ditched at any minute. The run has a life of sixteen days, of which only six have been spent, and all manner of things are possible. The chapter of accidents is of course a long one, but they are now becoming merely incidents. Of course in the Adirondacks region some rough spots were found. Also many cars found soft spots. A full dozen got into ditches, and there were some serious accidents. Perhaps the worst was the loss of the index finger of his right hand by Birmingham, the chauffeur for Hart D. Newman, who



SARATOGA LOOKED INVITING TO THE TOURISTS, WHO SPENT SUNDAY IN RECUPERATING.

was working at the magneto and got his finger caught in the gearing. An amputation became necessary. To-day's run was only 38 miles, including a stop of two hours at Ausable Chasm.

### FROM CHAMPLAIN TO MONTREAL.

By ALFRED REEVES.

MONTREAL, CAN., July 18.—With the arrival of the automobile caravan here to-day the first half was completed of the third annual tour of the American Automobile Association and the second contest for the Charles J. Glidden trophy. Since leaving Buffalo last Thursday, 510 miles have been covered by the tourists in six days' riding, and although some hard journeying has been done, the participants to-night all proclaim the affair to be a success far beyond expectations.

Montreal to-night is full of automobilists, and from the stores and public buildings float American as well as Canadian flags. The Montreal Club is holding reception and to-morrow the visitors will be taken to Lachine Rapids, Mt. Royal and other points of interest. On Friday the string of seventy cars will leave for Three Rivers, a trip of 96 miles. The idea of checking stations has worked out well, and bids fair to evolve a winner of the trophy by a process of elimination that will allow no arguments.

Because of the custom regulations encountered by the tourists in taking their cars in Canada at Rouses Point, the start to-day was not made until half past eight. An hour was allowed at the Point to fill out the custom house papers, but not more than a few minutes were required, owing to the filing of a \$50,000 bond by the A. A. A., and the courtesy of the Canadian officials in coming to Lake Champlain yesterday and issuing the Quebec licenses upon payment by each tourist of \$5 for registration and \$5 for a license.

After being checked out at Lake Champlain Charles Burnham performed a record feat by replacing a front axle on his Peerless in ten minutes. The axle bent when Burnham dropped into a ditch in the mountains on Monday. He was on time at the next control. S. B. Stevens (Darracq) lost his perfect score by being two minutes late at the St. John control to-day. C. W. Kelsey (Maxwell) drove into a ditch to avoid hitting a team of horses that shied, but was quickly on the road again. J. E. Demar (English Daimler) when in a cloud of dust ran into the rear of G. G. Buse's Packard and smashed the radiator. It took half an hour to make the repair. Arthur Holden (Stearns) had three punctures, but a record run brought him here with only 15 seconds to spare.

The ride to-day was over rough and dusty roads, especially on the Canadian side, and there were punctured tires galore. The towns enroute were gay with French, Canadian and American flags, waved energetically by the village folks who shouted gleefully as they viewed for the first time some of the big road locomotives that whirled along, throwing great clouds of dust in the air and carrying their begoggled occupants. That the automobile is nearing perfection is evidenced by the extraordinary condition of the cars after a week's hard riding, most of it over rough roads full of water breaks.

### GLIDDEN TROPHY SCORE AT MONTREAL.

No. 1.	Apperson, 40-45-h.p., N. H. Van Sicken, Chicago A. C.	0
No. 2.	Stearns, 40-45-h.p., Arthur Holden, Cleveland, O.	0
No. 3.	Stearns, 40-45-h.p., L. J. Petre, Cleveland, O.	0
No. 8.	Thomas, 50-h.p., Ezra E. Kirk, A. C. of Buffalo.	0
No. 9.	Thomas, 50-h.p., George M. Davis, A. C. of Buffalo.	0
No. 11.	Pope-Toledo, 35-40-h.p., George Soules, Toledo, O.	0
No. 12.	Pope-Hartford, 25-h.p., Wilbur C. Walker, Hartford.	0
No. 14.	Pierce Arrow, 32-h.p., Philip S. Flinn, Pittsburg, Pa.	0
No. 15.	Knox, 35-40-h.p., William E. Wright, Springfield A. C.	0
No. 25.	Columbia, 24-28-h.p., Chas. F. Barrett, A. C. of Hartford.	0
No. 27.	Pierce Great Arrow, 40-45-h.p., Percy Pierce, Buffalo.	0
No. 28.	Pierce Great Arrow, 40-45-h.p., A. E. Hughes, Rhode Island A. C.	0
No. 30.	Buick, 22-h.p., W. C. Durant, Jackson, Mich.	0
No. 41.	Maxwell, 16-h.p., I. C. Kirkham, New York City.	0
No. 47.	Peerless, 30-h.p., John L. Snow, Bay State A. A.	0

No. 51.	Oldsmobile, 28-30-h.p., Ernest Keeler, Lansing, Mich.	0
No. 53.	Cleveland, 30-35-h.p., Dexter Fairbanks, Cleveland A. C.	0
No. 56.	Peerless, 45-h.p., Charles Burnham, Cleveland A. C.	0
No. 58.	Darracq, 40-60-h.p., S. B. Stevens, A. C. of America.	0
No. 66.	Marmon, 30-h.p., Frank E. Wing, Bay State A. A.	0
No. 67.	White, 18-h.p., H. K. Sheridan, Cleveland.	0
No. 70.	Oldsmobile, 28-30-h.p., Palmer Abbott, New Orleans, La.	0
No. 73.	Packard, 24-h.p., Gus G. Buse, Buffalo, N. Y.	0
No. 52.	Oldsmobile, 28-30-h.p., R. R. Owen, Cleveland A. C.	1
No. 62.	Lozier, 40-h.p., E. R. Lozier, New York, N. Y.	1
No. 50.	Corbin, 24-h.p., Maxwell S. Hart, New Britain A. C.	2
No. 63.	Elmore, 35-h.p., J. H. Becker, Cleveland A. C.	2
No. 36.	Columbia, 40-45-h.p., W. W. Burke, New York M. C.	3
No. 61.	Reo, 16-h.p., T. P. C. Forbes, New York Motor Club.	3
No. 65.	Marmon, 30-h.p., T. E. Schulz, New York Motor Club.	4
No. 55.	Crawford, 24-28-h.p., W. A. Danzer, Hagerstown A. C.	7
No. 5.	Stoddard-Dayton, 30-35-h.p., J. H. McDuffee, Chicago.	10
No. 59.	Oldsmobile, 28-30-h.p., John Banford, Lansing, Mich.	12
No. 26.	Packard, 24-h.p., Frederick J. Pardee, Chicago A. C.	15
No. 21.	Haynes, 50-h.p., Elwood Haynes, Chicago A. C.	36
No. 64.	Buick, 30-35-h.p., W. L. Marr, Jackson, Mich.	40
No. 16.	Stevens-Duryea, 50-h.p., R. B. Craufurd, New York.	87
No. 69.	Locomobile, 30-35-h.p., B. H. Knowles, Brooklyn, N. Y.	89
No. 37.	Peerless, 30-h.p., C. G. Wridgeway, A. C. of America.	119
No. 54.	Pope-Hartford, 20-25-h.p., W. L. Davis, Hartford, Conn.	179
No. 60.	Corbin, 24-h.p., Philip Corbin, Jr., New Britain A. C.	248
No. 48.	Cleveland, 30-35-h.p., James Laughlin, Berkshire A. C.	663
No. 20.	Clement-Bayard, 24-h.p., E. M. Wiley, New York City.	000

Nos. 1, 5, 6, 17, 26 and 35 drove from Chicago to Buffalo, and Nos. 17 and 35 retired at this point.

### The Score for the Deming Trophy.

No. 24.	Maxwell, 36-h.p., C. W. Kelsey, New York M. C.	0
No. 31.	White, 18-h.p., Augustus Post, A. C. of America.	0
No. 33.	White, 18-h.p., Watson Coleman, Bay State A. A.	0
No. 40.	White, 18-h.p., J. G. Cassatt, A. A.	0
No. 39.	White, 18-h.p., L. F. Braine, New York M. C.	153
No. 74.	Packard, 24-h.p., Chas. Parvin, A. A.	276
No. 43.	Peerless, 30-h.p., F. H. Peitsch, Chicago A. C.	365

### Non-Contestants Who Are Touring.

No. 7.	Packard, 24-h.p., G. O. Draper, Massachusetts A. C.	
No. 32.	Packard, 24-h.p., B. W. Reichert, New York M. C.	
No. 49.	Stevens-Duryea, 20-h.p., Chas. L. Auger, A. C. of America.	
No. 71.	Cadillac, 10-h.p., Zalman Pennock, A. A. A.	
No. 72.	Pierce Great Arrow, 60-h.p., A. N. Jervis, A. A. A.	
No. 75.	Pope-Toledo, 45-50-h.p., J. M. Morrison, Bay State A. A.	
No. 81.	White, 18-h.p., James B. Dill, N. J. A. C. Expected to join at Lake Champlain.	
No. 82.	White, 18-h.p., Ezra T. Fitch, New York A. C. Expected to join at Jackman, Me.	

### Those That Lingered by the Wayside.

No. 19.	White, 18-h.p., Webb Jay, Chicago A. C. Met with accident on first day, car catching fire while taking on gasoline. Rejoined tour at Saratoga with another car.	
No. 45.	English Daimler, 30-h.p., T. F. Moore, New York M. C. Changed cars at Saratoga; retired from Glidden contest.	
No. 29.	Buick, 30-h.p., H. E. Shiland, A. A. A. Had differential troubles 22 miles from Buffalo; expected to rejoin tour.	
No. 34.	Gearless, 50-h.p., J. W. Breyfogle, Rochester A. C. Dropped out.	
No. 6.	Silent Knight, 30-40-h.p., C. Y. Knight, A. A. A. Dropped out.	
No. 57.	Harrison, 40-h.p., A. A. Russell, Grand Rapids A. C. Dropped out at Saratoga for new springs; expected to rejoin tour.	
No. 18.	Packard, 24-h.p., H. D. Newman, New Orleans A. C. Retired from Deming contest on account of accident to mechanic.	
No. 23.	Pope-Hartford, 20-h.p., J. A. Mechaley, A. A. A. Retired from Glidden contest.	

### The Committee Cars.

No. 22.	Paul H. Deming, 18-h.p. White, A. C. of Detroit.	
No. 42.	Sidney S. Gorham, 30-h.p. Winton, Chicago A. C.	
No. 44.	George Watson Beach, 28-h.p. Packard, Hartford A. C.	

### The Service Cars.

No. 76.	Oldsmobile runabout, 6-h.p. "What's Wanted."	
No. 77.	Knox Automobile Company, Knox wagon, Springfield, Mass.	
No. 78.	Olds Motor Works, 32-h.p. Oldsmobile, Lansing, Mich.	
No. 79.	Packard Motor Company, Packard car, Detroit, Mich.	
No. 80.	Maxwell-Briscoe Motor Company, 16-h.p. Maxwell, Tarrytown, N. Y.	

### The Confetti Cars.

No. 13.	Walter C. White, 18-h.p. White, Cleveland A. C.	
No. 46.	H. A. Grant, 10-h.p. Maxwell, Tarrytown, N. Y.	

### DEAD RIVER REGION ROAD DIRECTIONS.

Some interesting details of the Glidden tour through the Dead River region from North New Portland, Me., to Rangeley Lakes, Maine, have been compiled by Judge James B. Dill, who, in company with Augustus Post of the Touring Committee of the A. A. A., laid out the route for the Glidden tour early in June. Judge Dill states that the run through the Dead River region is one of the most interesting day's runs, it being the last day but one on the route, but, owing to the wildness of the country and the inability to obtain information, the route may prove confusing to those who are unaccustomed to travel through the woods, and he has prepared the following directions in detail from North New Portland to Rangeley:

Leaving the Dirigo House at North New Portland, take first left-hand turn, .2 miles, following the telephone wire, passing a farmhouse on the left. At the next fork of the roads take the left-hand road, following the single telephone wire to the left. Cross bridge. This is the beginning of Lexington Flats, a four mile straight-away course wide enough for two, and in many places three, automobiles, with no natural or artificial speed limitations. The road is clean, no holes, bridges or dangerous places. At 4 miles a road comes in from the left hand but does not cross the road upon which you are driving; continue straight ahead. At 7.9 a brown, unpainted building on the left side, with the sign "Post-office"; the road branches right and left. Whether you take the right or left road is optional, both roads coming together two and a half miles away. Both roads are good going, the right-hand road having a slight preference in quality. Marking the course by the right-hand road, at 8.9 the road forks; continue on the left-hand course. There is a white house on the right hand. At 9.4 a farm road branches off to the left across a bridge to a farmhouse which is plainly in view. Do not take this road. At 9.6 there is a water trough; a small white schoolhouse on the right-hand side is passed at 10.1.

At 10.4 the other road—that is, the left-hand road from the post-office—joins both roads, and the road from this point gradually ascends to the height of the land at 12.4. From 12.4 there is a slight descent and again a rise, and at 16 the road drops into a short valley and across the head of a small pond; the going is right. At 17.6 a signboard is passed, "Flagstaff eleven miles." At 19.1 the lodge house of Good Woods Inn is passed. At 21.9 Parsons farm, a comfortable country boarding house, where transient guests are entertained, appears. At 24 Dead River. At 26.9 small schoolhouse. At 29.6 turn to the left away from Flagstaff. Do not turn to the right and across the bridge that takes you into Flagstaff. At 32 turn right into Stratton, passing through the village by Hotel Blanchard, and at 39.8 water fountain. Turn left at 41; turn sharp left at signpost. The road here forms a T. You leave the straight road and turn into the left-hand road. At 42.2 is Green Farm Hotel, where the road curves to the right and then again to the left. You cross for the first time the narrow-gauge railroad at 42.9, the second time at 44.3, and immediately thereafter for the third time at 46.8, for the fourth time at 46.9, for the fifth time at 47.3, and for the sixth time at 48.2 and finally at 51.3. At the Dead River station, 51.9, you turn to the right. Then crossing the track to the left, take the straight road to Rangeley, about five miles distant. Just before entering Rangeley at 54.5 you cross the railroad track; from this point the Rangeley Lake House is plainly visible. Then follow into Rangeley, turning left at the second street after entering the village, following down into the main street, then turning back left again through the village, down a slight descent, and then by another ascent in the main street of the village, then turning right, into the private road which leads to the Rangeley Lake House.



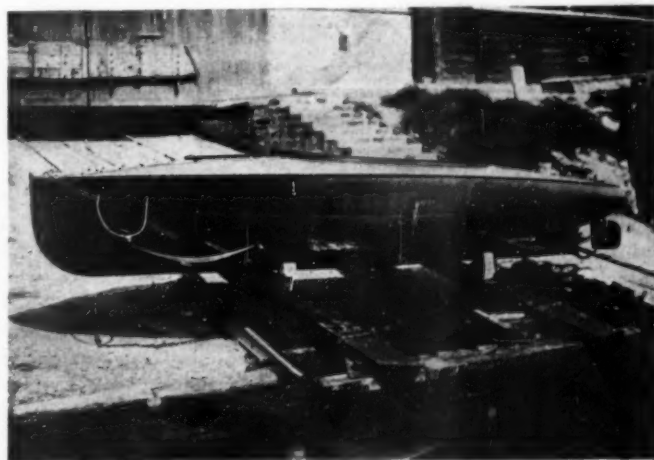
OLDSMOBILE RUNNING BORING MACHINE IN ICE PLANT.

### RUNNING BORING MACHINE BY AUTO.

Power is power, whether it is generated in a stationary steam engine or the gasoline motor of an automobile. If there is enough of it, the power in the automobile engine will do the work of the steam engine, if it can be suitably harnessed. The illustration shows how this has been done in one case at least. The cylinders of an ice-making machine in Neosho, Mo., had to be bored at a time when the steam engine was temporarily out of commission, so A. P. Sitton just backed his Oldsmobile runabout into the shop, rigged a countershaft under the car with a wood split pulley on it, ran a belt from the flywheel of the motor to the pulley and connected up with the boring bar by sprockets and chains. The motor was started before the tool commenced its cut and was kept going until through the cylinder, and the job was done just as well as if the regular motive power had been used.

### AN AMPHIBIOUS AUTOMOBILE.

French designers have been responsible for many of the freaks and novelties of motordom and have recently added to their list of inventions one which is perhaps the most ingenious of the lot. This Canot Voiture is an amphibious automobile, or a motor car and motor boat combined, and has lately undergone a number of successful trials in the vicinity of Paris. It is built on the usual lines of a motor boat, but is provided with exterior springs and supports so that it can be quickly mounted, for land service, upon four wheels, of which the two in the rear are the driving wheels. This motor novelty may be said to be self contained, since space is provided in the interior for carrying the wheels and change-gear when the machine is to be used on the water. On the other hand, these attachments are instantly available when it is desired to make a change from water travel to locomotion on land.



CANOT VOITURE COMBINATION AUTO AND BOAT.

## CATECHISM OF THE GASOLINE AUTOMOBILE\*—VI

By FORREST R. JONES, M.E.

**Q.**—WHAT preparations do you make before starting out with a car that is in good order?

**A.**—See that there are gasoline, cooling water, and lubricating oil in the automatic feed tank. Give each grease cup a turn, and oil all places where motion occurs between the parts. Do not neglect the steering gear connections; examine them for tightness and safety.

**Q.**—When starting the engine by cranking, what do you do?

**A.**—Turn on the gasoline. There is a valve just under the tank in the gravity system.

Set the brake which releases the clutch.

Put the transmission gear in neutral position.

Turn on the lubricating oil if the gravity system is used.

Close the switch of the primary circuit.

Set the timer to give a late spark.

Open the throttle partly.

Prime the carbureter if required. This is done by depressing the float or lifting the needle valve when there is no float.

Put the crank on the main shaft so as to pull up on it (never push down on the crank), and turn the engine over by muscular exertion. Two or three times are sometimes necessary to draw the mixture into the cylinder and ignite it.

Fasten the crank up so that it will not strike obstructions in the road.

After taking the chauffeur's seat in the car—

Put the gears in slow speed when sliding gears are used.  
Release the brake.

Allow the friction clutch to come into engagement very gradually.

When the speed of the car increases, release the clutch and throw the change-speed lever to the next position for faster travel of the car. The change should be made as rapidly as possible, and so on until the direct drive is reached. The clutch should always be brought into engagement gradually.

**Q.**—If the engine will not start, especially when cold, what can be done?

**A.**—Prime the cylinders by pouring about a thimbleful of gasoline into each one.

Place a stop over the air intake of the carbureter so as to nearly close it. The hand will do.

Warm the cylinders by pouring hot water into the water jacket space, or over the outside.

Do not resort to the next expedient unless absolutely necessary.

The cylinders may be warmed by putting a very small quantity of gasoline on them and lighting it. Then squirt more on with a small oil can. The gasoline in the can will not catch fire when the nozzle is small. The temper of springs may be drawn if in the flame.

**Q.**—Why should the timer be set for late spark when cranking?

**A.**—If set for early spark the charge may be ignited before the piston has completed the compression stroke. This will drive the piston back and turn the shaft in the wrong direction. The resulting "kick" is dangerous, or at least painful, since it is generally powerful enough to snap the crank handle out of one's hand.

**Q.**—What may cause a "kick" when cranking just after the engine has been running, although the timer is set for late spark?

**A.**—An overheated cylinder, on account of some of the carbon which is almost invariably found on the walls being high

enough in temperature to ignite the charge before compression is completed.

**Q.**—How can a four-cylinder motor be started without cranking (starting on compression)?

**A.**—If, just before the engine stops, the ignition is cut off and the throttle opened, one cylinder will generally receive a charge and stop in a position to start when the charge is ignited. By closing the ignition circuit and moving the timer so as to produce a spark, the engine will generally start.

**Q.**—How can you start the motor if the crank is broken or lost and the engine will not start on compression?

**A.**—When the flywheel is accessible it may be used to turn the engine over, but care should be exercised to push rather than pull it, and to grasp it by the smooth rim so that no harm will be done to the hands when explosion occurs.

Priming by pouring a small quantity of gasoline into the cylinder through the small petcocks at the top may help.

The automobile may be pushed forward or allowed to run down hill with the driver in his seat, holding the clutch disengaged. The gears should be set for high speed. After some speed has been attained the clutch may be thrown in and the momentum of the car will start the engine to turning over. As soon as an explosion occurs, the clutch should be released to allow the engine to gain speed of rotation.

**Q.**—Why should the timer be advanced as the engine increases in speed of rotation when driving the car?

**A.**—If the timer is left for a late spark the charge will not be all burned before the exhaust valve opens, and will continue burning as it passes out through the exhaust port and pipe. This results in a loss of power, and also causes excessive heating of the engine, especially at the exhaust valve and around the exhaust port. The combustion should begin early enough to be complete in the early part of the impulse stroke in order to utilize the heat of combustion to drive the piston and to allow the gases to cool somewhat by expansion and contact with the cylinder walls before passing out.

No provision is made for varying the time at which the contact points in the cylinder are separated in at least one automobile with make-and-break low-tension ignition. The magneto used for furnishing the ignition current increases in speed as the engine turns over faster and gives a heavier arc with the increased speed. The larger volume of mixture ignited by the heavier arc and the more rapid inflammation resulting compensate in a measure for the greater speed of rotation.

**Q.**—What indication, observable while driving the car, may show that ignition is too late?

**A.**—The circulating water may become so hot as to be converted into steam, which, if there is any visible opening to the radiator, can be seen escaping. The exhaust pipe may become red hot near the engine.

**Q.**—What permanent injury may be caused by running with too late ignition?

**A.**—The exhaust valve is apt to become pitted and warped so as to leak. The exhaust pipes may warp and leak where they connect to the engine casting.

### Spark and Throttle Control.

**Q.**—How should the spark and throttle control be set when running a car at a uniform speed along a good, level road?

**A.**—The throttle should be closed as much as possible in order to economize fuel and prevent undue heating of the engine, and the spark should be advanced as far as possible for satisfactory running of the engine.

**Q.**—If the spark is advanced too far when running, what bad result follows?

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**A.**—The combustion pressure will become too high before the piston has completed its compression stroke and offer so much resistance to it during the completion of the stroke as to produce heavy stresses in the crankshaft, which may be sufficient to break it.

**Q.**—What is an indication that the spark comes too early when running?

**A.**—There will be a pounding sound (knocking) in the engine generally, and in the one-cylinder or two-cylinder engine an additional tremor may be given the car. In an engine with four or more cylinders that is new, with all parts snugly fitted, there may be no knock or other indication that is discernible, unless the spark is excessively advanced. Loss of power will always come with excess of advance, but not necessarily with the amount of advance that produces knocking in a somewhat worn engine, or even in a new engine of the single-cylinder or two-cylinder type.

**Q.**—If the spark and throttle are properly set when running at the legal rate on a level road, how would you manipulate them to climb a grade without losing speed?

**A.**—Retard the spark slightly, and open the throttle gradually, then advance the spark carefully up to the safe limit.

**Q.**—When the car slackens speed on an increasing grade, how do you throw the sliding gears from high speed to a slower speed?

**A.**—Disengage the clutch, bring the gears to neutral position between high speed and next to high speed, increase the speed of the engine, throw in the clutch momentarily, disengage again, and bring the sliding gears quickly into the next to high speed.

In automobiles with friction clutches of small diameter and light weight of the part between the clutch and change-speed gears, the gears can generally be shifted more readily and in the same manner as when changing from slow speed to high.

**Q.**—How would you adjust a carbureter which has a valve in the air inlet that is lifted against a spring by the air when the throttle is open wide?

**A.**—Set the gasoline needle valve to what you judge is about the proper opening, set the throttle so that it is nearly closed, prime the carbureter if there is any provision for so doing, set the spark in the late position and crank the engine until explosions occur in the cylinder. Then adjust the carbureter needle valve until the engine gives the highest speed with the throttle well closed. Then open the throttle wide, with the spark still retarded, and adjust the air valve until the best speed for the open throttle is obtained. This will give adjustments sufficient for driving the car, but final adjustments may be necessary to get the most power. The test for power may be made by climbing hills on the road and further adjustments made until the best conditions are reached.

#### Lubricator Adjustment.

**Q.**—How do you adjust a gravity lubricator?

**A.**—Set the screw needle valve for each pipe until the required number of drops of oil per minute pass through the sight feed.

**Q.**—How do you adjust a compression lubricator?

**A.**—Start the engine and adjust as for the gravity lubricator. The speed of the engine when adjusting is not material.

**Q.**—How is a mechanical lubricator adjusted?

**A.**—There is usually some means of adjusting the length of stroke of each plunger, which forces oil out to its own particular part to be oiled. Some have a sight feed to be used temporarily for adjusting, so that they can be set for the required amount of oil for each movement of the pump plunger, or other device, for forcing the oil out. Start the engine and adjust for the required amount of oil. The feed device for each pipe should continue delivering the same amount of oil per stroke of its plunger or other device, whether the oil is thick or thin, hot or cold.

**Q.**—What kind of lubricating oil should be used for the cylinders and crankcase?

**A.**—One that will stand a high heat test and leave no deposit in the combustion chamber and on the cylinder walls when burned.

**Q.**—When smoke is discharged from the exhaust what does it indicate?

**A.**—Excess of lubricating oil gives blue smoke. Too much gasoline causes black smoke and soot.

**Q.**—Can excess of gasoline be distinguished from excess of lubricant?

**A.**—Yes. Excess of gasoline produces a strong, disagreeable odor, and if the engine is exhausting in a closed room the eyes will suffer.

**Q.**—What are the indications of poor lubrication in the cylinder?

**A.**—In a single-cylinder or two-cylinder engine there will be loss of power and the engine will slow down, and even stop. With four or more cylinders there will be loss of power and some slowing down of the engine, which, however, may not be noticeable if lubrication is poor in only one cylinder. In such a case the remaining cylinders would keep the engine running and abrasion or cutting will follow, which is not infrequently accompanied by a groaning or creaking noise in the cylinder.

**Q.**—If the water circulation fails or the water supply is insufficient in a water-cooled engine, how will it manifest itself?

**A.**—In practically the same manner in a single-cylinder or two-cylinder engine as poor lubrication, except that in the case of four or more cylinders the engine will lose power and probably stop, since lack of cooling will destroy the lubricant in all the cylinders and cause excessive frictional resistance to the motion of the pistons.

**Q.**—Is the same kind of lubricant suitable for both water-cooled and air-cooled cylinders?

**A.**—No. The air-cooled cylinder requires a lubricant with a higher fire test, and in general thinner than for the water-cooled cylinder.

#### Lubricant for the Transmission.

**Q.**—What kind of lubricant is suitable for sliding-transmission gears?

**A.**—Practice shows great diversity. It is safe to say, however, that any lubricant of reasonable body that the gearcase will retain gives good service. The construction of some gearcases is such that good machine oil is retained and answers with entire satisfaction, while in other types a grease must be used, since the oil leaks out rapidly. A combination of oil and grease is not infrequently put in gearcases and found satisfactory. Graphite grease especially is much used, or mica grease, which is of much the same nature. These greases have either graphite or mica in small flakes mixed in with the true grease. Yellow grease used for axles has also proved good. Graphite or mica grease should never be used when there is any possibility of its working into the crankcase and from there to the cylinders. The solid matter causes the pistons to bind and heat the cylinder.

**Q.**—What kind of lubricant is suitable for ball bearings?

**A.**—Oil or grease that is not too heavy or solid. Generally the most fluid lubricant, not thinner than the heavier machine oils, that can be satisfactorily retained, is the one to select. A grease containing solid matter should not be used.

Besides the American entry for the British International Cup for motor boats, for which the *Dixie* is down, the following entries have been received by the Motor Yacht Club: Lord Montagu of Beaulieu and L. de Rothschild, *Yarrow-Napier*; Mawdsley Brooke, *Brooke I*; S. F. Edge, *Napier III*; J. Hutton, *Hutton II*, and Lord Howard de Walden, *Rose en Soleil* and two other boats.

## SPEED-CHANGING GEARS—SELECTIVE AND FRICTION

THERE is a type of sliding-gear transmission in which there is no direct drive, all speeds being through gears. The primary shaft is a single piece from end to end, and the drive to the rear wheels is from the rear end of the secondary shaft. Fig. 1 shows such a transmission diagrammatically. The primary shaft *A* has a squared part, on which slides the hub *B*, carrying three gears; *C* is the secondary shaft, carrying three fixed gears. The diagram shows the high speed engaged, gears *D* and *E* being in mesh. Moved to the right—backward—gears *F* and *G* engage next, giving intermediate speed, and lastly gears *H* and *I* mesh, giving the low speed. Reverse is obtained by sliding the gears to the left of the low gear position, when gear *H* engages a gear on the reverse countershaft, not shown.

If a car fitted with a sliding gear transmission of the ordinary type is running on the direct drive, for instance, and the driver wishes to drop back into the lowest speed, the intermediate gears must pass into and out of engagement before the low gear is reached. The gears must pass progressively from one position to another, up or down—in fact, this type is frequently called the *progressive type* of sliding gears. In the case of a four-speed gear this is sometimes a disadvantage, owing to the many gear positions to be passed through in making changes quickly. To remedy this defect, a transmission of a *selective type* has been adopted by a number of manufacturers. In this any desired position of the gears can be taken at once, without passing through any other positions, provided the controlling lever is first brought back to neutral position.

### Selective Sliding Gear Transmission.

In Fig. 3 is shown a selective transmission, giving four speeds forward. The primary shaft *A*, the secondary shaft

*B*, the arrangement of the driving sleeve *C*, and its pinion *D* meshing with gear *E* in the secondary shaft are the same as in the progressive transmission already described. There are three gears, *F*, *G* and *H*, on the secondary shaft, however, instead of two, as in the three-speed transmission, and there are two sliding hubs; hub *I* carries a small gear *J* and half of the direct drive clutch, while hub *L* carries two gears, *M* and *N*, of different sizes, both larger than gear *J*. Each hub has a groove and collar, and can be moved independently of the other hub by means that will be described later.

In the drawing the gear is shown in neutral position. If hub *L* is shifted backward—to the right—until gear *M* meshes with gear *H* on the secondary shaft, the slow or first speed will be engaged. If the gears are brought back to the neutral position and then moved to the left—forward—gear *N* on the hub *L* will mesh with gear *G* on the secondary shaft, giving second speed. To engage the third speed the hub *L* and its gears are brought back to neutral position and left there, being held from shifting by an automatic locking device, and hub *I* is moved backward until its small gear *J* meshes with the large gear *F* on the secondary shaft.

The direct drive for the high speed is engaged by means of a clutch, which differs somewhat from the claw clutch already described. Instead of the claw on the rear end of sleeve *C*, there is a small gear of the ordinary type, usually formed integral with the driving pinion on the sleeve. In the hub *K* is cut a recessed or internal gear, which is of exactly the right size to permit the little gear to enter easily, but fit snugly. This makes a very secure clutch, and has the advantage of economizing space length-

wise. It is naturally a somewhat more expensive arrangement than the plain claw clutch.

### Selective Gear-shifting Mechanism.

The means for obtaining all these gear positions with a single lever may be divided into two groups. Taking up first the part of the controlling mechanism contained in the gearcase, it will be seen that three bars, *S*, *T* and *U*, are arranged to slide longitudinally in grooves; each bar carries an arm at right angles, and each arm terminates in a fork or collar—the collar being shown in this case—engaging in a groove in the hub of the gears it is to control. First and second speeds are controlled by bar *T*, third and fourth by bar *U*, while bar *S* controls only the reverse, its arm moving a long pinion—which slides into mesh with gears *H* and *M* when the latter is in neutral position. The pinion is long enough to mesh with both at once.

The rear ends of the bars are notched, all three notches being in line when all the gears are in neutral position. A rod carrying a cam or finger passes through the notches at right angles to the sliding bars. The cam is so formed that when the rod is turned on its axis the shifting bar in whose notch the cam happens to be will be moved longitudinally, forward or backward, according to the direction of rotation of the rod, shifting the gears accordingly.

### Lever for Selective Gears.

As two distinct movements of the cam-rod are necessary for shifting the gears, so there must be two corresponding movements of the hand lever. Instead of having only a back and forth movement, as is the case with the gear-shifting lever of a progressive transmission, there is also a sideways movement. The sideways

or lateral movement slides the cam-rod along until the cam is in the notch corresponding with the gear it is desired to engage; then a movement backward or forward moves the gear. A slotted plate, Fig. 4, serves as a guide for the lever. In the drawing the lever is shown in the neutral position, and it may be moved laterally—from bottom to top of the drawing—without shifting the gears from neutral, the lateral movement sliding the cam rod along the notches. When the lever is opposite any pair of notches in the plate, the cam is in the proper position to act on a sliding bar; obviously, then, the gears cannot be shifted unless the cam is in the right place. In Fig. 4 the lever is shown in neutral position opposite the third and fourth speed notches. A simple pull backward—to the right of the drawing—engages the third gear. By bringing the lever back to the central passage the third gear is disengaged, and the lever may be moved along until opposite the notches *B* and *C*, when a movement backward or forward will engage either first (low) speed *B* or second speed *C*; or the lever may be moved direct from the high speed position to the reverse notch *A* or the first speed notch *B*, or direct from reverse to the high speed notch *E*, without passing through any other gear positions. Locking devices are fitted both to the lever and to the individual sliding bars in the gearcase, so that neither can shift accidentally, through vibration or otherwise.

The selective transmission illustrated in Fig 3 is arranged as it would be for a car with side chain drive. The countershaft *P* is driven from the primary transmission shaft by bevel pinion *O* and bevel gear *P*. The shaft is divided, and carries the "differential" *V*, which permits the opposite ends of the shaft, and consequently the road wheels to which they are connected by chains,

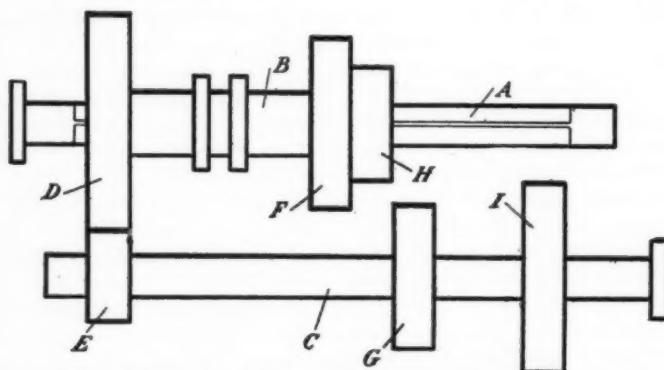


FIG. 1.—SLIDING GEAR TRANSMISSION WITHOUT DIRECT DRIVE.

to rotate at different speeds. All the mechanism of the transmission and bevel gear drive is thus inclosed in a single casing, the bevel gears being in a rearward extension of the main casing. It is not necessary, of course, to use the side chain drive with this

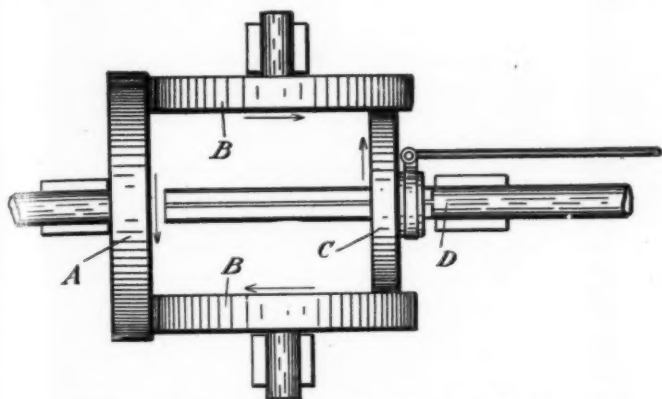


FIG. 2.—FRICTION TRANSMISSION WITH DOUBLE DRIVE.

type of transmission; the shaft drive may be used just as well. In that case the extension of the gearcase would be omitted, and the primary shaft would extend through the rear wall of the case.

#### Frictional Speed-changing Mechanism.

Speed-changing transmissions, in which friction is relied upon to transmit the power, offer exceedingly attractive possibilities to anyone who can overcome the difficulties attendant upon a practical construction. The fundamental idea is to use a large, smooth-faced disk, mounted on the engine shaft, as the *driving* member, and a second disk, mounted on a shaft at right angles to the engine shaft, with its edge pressing against the face of the driving disk, as the *driven* member. If the second disk is pressed against the driving disk near its center, it is obvious that the linear

speed of the circle on which the driven disk rolls will be comparatively small, and the disk will be driven slowly. If, however, the driven disk be moved out to a point near the periphery of the driving disk, the speed of the driven disk will be increased in proportion to the increased diameter and speed of the circle on which it rolls. Intermediate points between the center and the circumference of the driving disk will give any desired speed, between the zero—at the center of the driving disk—and the maximum, at the extreme edge.

#### Friction Gear in Practice.

Friction transmissions, using but two friction disks, as described, are in practical operation and give good results. Another form is shown in Fig. 2, in which the object sought is to gain extra driving power by driving the transmitting disk from both sides at once. On the engine shaft is mounted the driving disk A, and on this are pressed the edges of two intermediate disks B B. Disk C is placed between disks B B, in contact with both, and can be moved along its squared shaft D to any point desired.

By looking at the arrows showing the direction of rotation of the various disks, it will be seen that the shaft D rotates in the opposite direction to the engine shaft. By moving disk C toward the center, the speed of shaft D is diminished until at the center of the disks B B there will be no movement. If the movement of disk C is continued past the center, it will commence to rotate in the opposite direction, giving a reverse direction to the rotation of the shaft D, which will now rotate in the same direction as the engine shaft. Shaft D may be attached to a propeller shaft by means of a universal joint, in the usual way, or it may drive a countershaft through bevel gears with side chain drive.

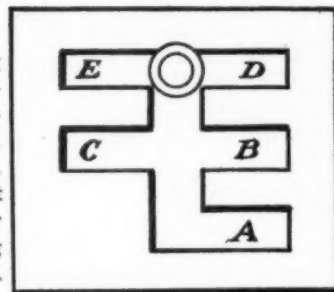


FIG. 4.—SLOTTED GUIDE PLATE.

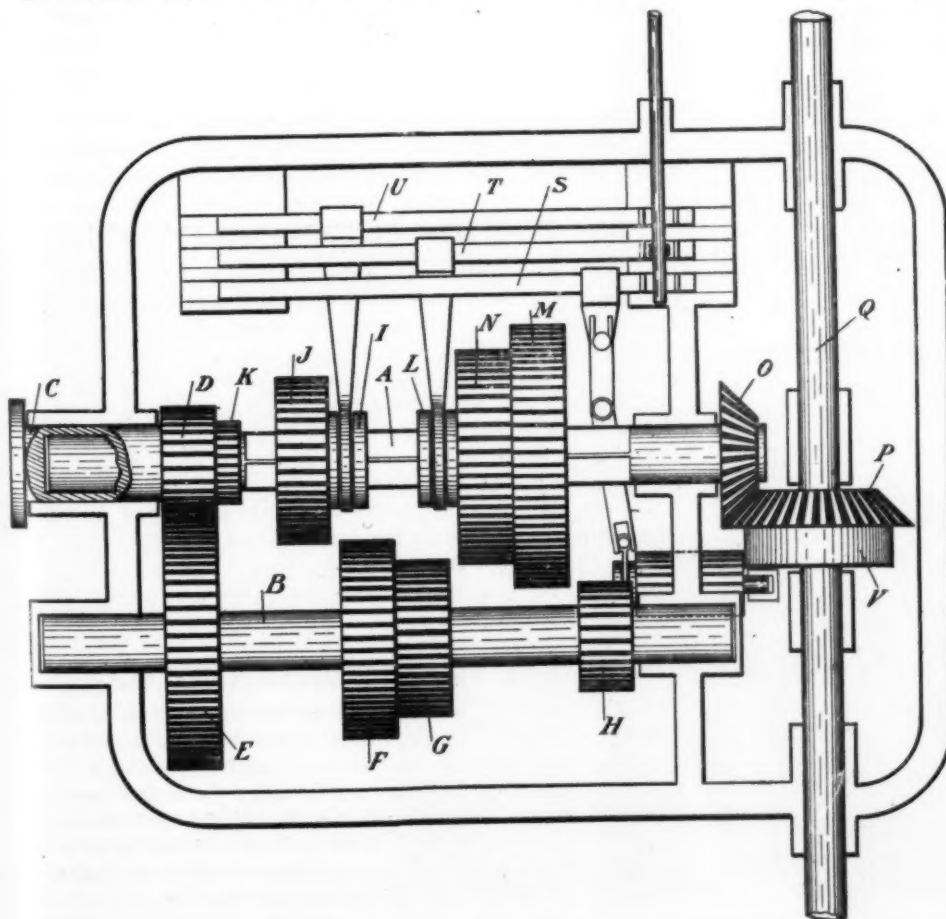


FIG. 3.—FOUR-SPEED SELECTIVE TRANSMISSION WITH BEVEL GEAR DRIVE TO COUNTERSHAFT.

In friction transmissions, it is usually necessary to remove the sliding disk from contact with the driving disk or disks when changing speeds. In the case of the two-disk transmission the sliding disk alone has to be withdrawn, but in the four-disk transmission illustrated the disks B B are both moved back enough to permit disk C to be shifted. The shifting lever works in a notched quadrant, so that when placed in any position the disk will be held there. The number of speeds obtainable is thus limited by the number of notches that can be made in the quadrant, but there is no difficulty in obtaining as many as would be of any practical use.

While for the sake of clearness shaft D is shown to terminate before reaching the driving disk A, in actual practice it is extended into a bearing formed in the boss of the disk A, thus steadying the disk C. All sorts of materials have been used for the friction surfaces, but a special paper filling, cast iron and aluminum alloy have given good results.

While a well designed and properly constructed frictional transmission is intended to transmit the entire power of the motor, it is less rigid and positive than a gear drive and very smooth in going into engagement, and therefore does not rack the car.

### NANTUCKET AND THE AUTOMOBILE.

BOSTON, July 16.—On the island of Nantucket the question of whether the automobile shall be permitted to enter the old whaling community and use the few roads, which are now practically monopolized by one-horse surreys transporting summer visitors from the town proper to Sconset and other points, is an all-absorbing topic of conversation, and the controversy is occupying much space in the columns of the local press. The highway commissioners recently gave a hearing on the rule of the selectmen excluding automobiles, and it was a strenuous session, arguments being presented pro and con. A contributor to the local newspaper, *The Inquirer and Mirror*, makes this defense of the automobile:

"Automobilists violate the law. Therefore, forbid them the use of the streets. All right. So be it. There are laws as to driving horses beyond a certain speed. Horse owners have been known to break this law. They also overload sometimes, which is also against the law. Lamé and sick horses are occasionally seen on the streets. Therefore prohibit the use of horses altogether. So be it. Druggists sometimes violate the excise laws. Close up the drug stores. Grocers are being indicted all over the state for violating the pure food laws. Abolish the groceries. Farmers not infrequently adulterate the milk and color the butter. Farming should be stopped. Kill off the cows. And so on, ad infinitum and ad absurdum. Of all the preposterous propositions this is the most pre-eminently preposterous. Automobilists who have taken the trouble to collect the statistics claim (and say they can prove it) that the number of accidents, fatal and otherwise, attributable to the auto is very much less, in proportion to the number of machines in use and the number of persons involved, than results from the use of horses—not counting the casualties to drivers of horses which take fright at autos with more or less serious result. I do not know that this is true. Perhaps it isn't. It does not affect the issue. What we do know is that every little mishap to an automobilist is made much of, given scare heads in the yellow press, and talked about far and wide—out of all proportion to its importance. 'Twas the same with the trolleys at first, and with the steam railroads before that. Both were fought tooth and nail and inveighed against with all the power of oratory and rhetoric. Shall we abolish them, too? It is even rumored that they sometimes violate the law.

"For humanitarian reasons, for sanitary reasons, for convenience, speed and power, for every reason, except perhaps economy (and that will come in time), the auto has the better of the horse, and while the horse will always be used, the auto will continue to increase and grow apace—despite the anti—like all other modern improvements."

### INDIANA STATE LAW SUPERSEDES LOCAL ONE.

INDIANAPOLIS, IND., July 16.—Judge Thomas A. Whallon of the city police court has decided that the automobile law passed by the last legislature annuls the Indianapolis ordinance regulating the speed of automobiles, and ordered ten drivers who had been arrested for violating the city ordinance, released. It is probable, however, that they will be rearrested on state warrants. The city ordinance, which was enacted a few years ago, fixed the maximum speed of automobiles in residence districts at twelve miles an hour, while the state law permits a maximum speed of fifteen miles an hour. While displeased with their arrest, drivers are pleased with this feature of the ruling, which allows them greater speed.

The arrest of the ten drivers, which included some of the leading business men of the city and two pretty society girls, resulted from a crusade started against automobile drivers by Police Chief Robert Metzger. Automobile drivers are not arrested on the streets, but are notified by telephone that they are wanted, and are asked to come down and give \$50 bond for their appearance in police court. They are required to give cash bond, however, as the police refuse to accept automobiles as security.

### DISTRICT OF COLUMBIA REGULATIONS.

WASHINGTON, D. C., July 16.—The automobilists of this city are greatly interested in amendments to the police regulations which the District commissioners have made or are about to make. Last week a new regulation went into effect. It provides that motor vehicles shall sound a suitable bell, gong, or horn when necessary to warn persons of their approach, but no unnecessarily loud or discordant alarm device can be used, the same being expressly forbidden. This new regulation was the result of numerous complaints made to the commissioners against the use of sirens on automobiles.

The commissioners have requested the corporation counsel to draw up a regulation concerning lights on automobiles, and that official is now at work on the matter. It is understood the automobilists will be given a hearing before the proposed regulation is put into effect.

The use of tire chains on automobiles within the city limits is also engaging the attention of the commissioners. The engineer commissioner has told his colleagues that the use of tire chains on the dirt roads within the city limits is damaging, and he wants to limit their use—that is, within the limits of the city.

### QUAKERS SEEK ARREST IN JERSEY.

PHILADELPHIA, July 16.—A peculiar state of affairs obtained last week on the roads leading out of Camden, especially on the White Horse pike, which forms a portion of the much-traveled Atlantic City route. Hitherto constables have been stationed at nearly every crossroad, but strange to say, they couldn't be found anywhere, despite the fact that they were being hunted.

It appears that several Philadelphians who have been refused licenses had decided, on advice of counsel, to seek arrest, in order to bring the matter before the courts. All day long, licenseless, they cruised in and around Camden, and up and down the pike as far as Hammonton. But nary a constable did they see. They returned home, unarrested, at nightfall. If they can continue to use the roads without being interfered with, all well and good. But of course the authorities will not allow that. The question of the hour all along the route was: "Where are the cops?" The situation is peculiar, to say the least, especially in view of the fact that the first day the new law was in force witnessed the apprehension of fully 150 automobilists on the Atlantic City road.

### ODD JUDICIAL DECISION IN CLEVELAND.

CLEVELAND, O., July 16.—According to the police prosecutor at Cleveland, there is no law in Ohio against stealing an automobile. This surprising announcement was brought out last week, when Officer Crawford, of the bicycle squad, brought in a man who had been riding around town in another man's machine. The "copper" only made the arrest after a long chase, the automobile finally stopping itself by colliding with a street car and smashing things generally. To the disgust of the policeman and the owner of the machine, the police prosecutor declined to issue a warrant, as he claimed there was nothing to show that the offender intended to steal the machine, and that apparently he was simply taking a ride. The Cleveland Automobile Club will endeavor to ascertain why it is any less criminal to steal a man's automobile than his horse.

### VERMONT TRIES PROBATIONARY PLAN.

BRATTLEBORO, VT., July 16.—An agreement has been reached whereby the cases against fifteen automobilists charged with violating the speed law have been continued to August 9. The object in continuing the cases was to place the respondents on probation, the understanding being that in the end the cases against such as obey the law from now on will not be pressed, and that the cases against such as continue to violate the law will be prosecuted on the date set for the next hearing.

## A GLIMPSE OF THE CHATEAU COUNTRY



By  
A. G. BATCHELDER

THE BEAUTIFUL VALLEY OF THE LOIRE—TOURS IS A CONVENIENT CITY FOR VISITING NEARBY CHATEAUX.

LE MANS was still in the throes of the Grand Prix, though the much heralded event of the Automobile Club of France had reached its termination. The Hotel du Dauphin continued charging one franc apiece for strawberries, and the multiplied francs per night for sleeping accommodations had not been reduced to normal figures. The public square was littered with confetti, the cafés were doing surplus business, and fakirs of all kinds abounded. The race over, we were ready and willing to bid adieu to the city of the Sarthe which had profited so substantially as a result of the 1906 European automobile derby.

The route back to Paris was certain to be a trail of dust, and a consultation involving Thompson, Bradley and Batchelder resulted in a decision to return in a roundabout way and have a glimpse of Touraine. We three were agreed in our desires to get away quickly from the excitement and dirt and heat of the several previous days. Therefore the fertile valley of the Loire sounded alluring, and late in the afternoon of the second day of the race we escaped from stifling Le Mans and headed for Tours, 80 kilometers away.

Half way to our destination was Château-du-Loir, and here we stopped for dinner after our willing Hotchkiss had made the delightful journey without hesitation of any sort. 'Twas a capital *dîner* that we leisurely ate, served skilfully by a pleasing maid whose *toute de suite* response to our hunger wants—transmitted in "American French" and interpreted without a smile—was typical of the politeness one invariably meets with in France, especially in the château country, where the language is of the purest quality and the enunciation perfect. Even I could comprehend occasional words.

The moonlight ride to Tours was something to remember for many a day, but near its conclusion, confident of the driving ability of the Chairman, I will confess to dozing, oblivious of the charm of scenery and the intoxication of night traveling in an automobile. I came out of my trance as we struck the long bridge across the Loire and entered Tours, where we found excellent accommodations at the Hotel du Faison, the courtyard of which was filled with the automobiles of earlier arrivals.

A cobweb-covered bottle of old Madeira gurgled forth some rare old wine fit for royalty and Americans, and one overflowing glass was sufficient to insure uninterrupted enjoyment of our welcome and luxuriously comfortable beds.

However, not much sleep did we permit ourselves in the Hotel du Faison, our plans calling for a start that preceded the rising of the sun. But the Grand Prix innings at Le Mans had accustomed us to break-o'-day calls, and so we responded with some degree of promptness to the knocking of the sleepy-voiced porter, who probably placed us among the rest of the eccentric Americans whose actions are often incomprehensible even to the flighty Latins. Tours is a most convenient place at which to locate and visit the surrounding châteaux. Loches is only 40 kilometers away; Chinon, 45 kilometers; Chenonceaux is an easy run; Azay-le-Rideau is also at close call, and Langeais and a half dozen other ancient edifices, some occupied and some in ruins, are comparatively short rides.

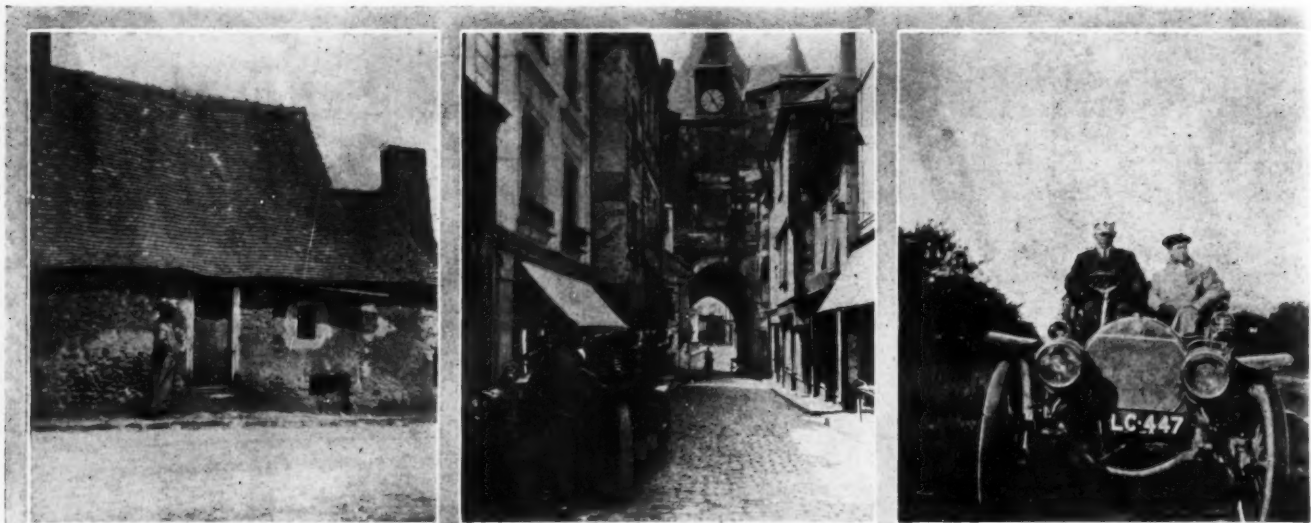
Tours has an old cathedral, and we gave it a hasty look before taking the river road to Amboise, 24 kilometers in the direction of Blois. Amboise is interesting and deserves a good bit of attention from anyone interested in the ever-changing history of France. From the château a grand view is to be had of the valley of the Loire, one of the most beautiful and fertile in all France. I dislike very much to shatter a tale in "The Lightning Conductor" wherein the two principals are said to have climbed the tower in an automobile. The versatile young lady who conducted us about the prem-

ises was very emphatic in her declaration that no automobile had ever climbed the winding stairway, and on this point she could not be budged.

Again on our way, we next visited Chaumont, now owned by the Prince de Broglie, one of the most active of French automobilists. One is shown the Bible of Catherine de Medicis, and it is said to be open at exactly the place where she last read so many years ago. This information may be especially for tourists, but one should not be too fastidious about facts in the château country, where everything is so fanciful and ancient and picturesque.



CHAUMONT, PICTURESQUELY LOCATED, IS MODERNIZED.



HOUSE THAT HAS STOOD FOR CENTURIES.

AMBOISE HAS MANY QUAIN BITS.

THE CHAIRMAN AND THE EDITOR.

Blois, which came next, is a city of over 20,000 inhabitants, and its château ranks high in historical value and magnificence. Here you are shown the bedroom wherein Catherine died, and here one is also treated to a look at the cabinet which contained the poisons that were so necessary in her business. Of course, the mournful story of the assassination of the duc de Guise is dwelt upon in all its details. Another magnificent view of the valley is possible from the walls of the old château, which certainly has had a notable existence.

It was only 17 kilometers to Chambord, off the main road, and after giving its château a too limited examination we hurried on to Orleans, with its famous old cathedral, and here we rested for the night.

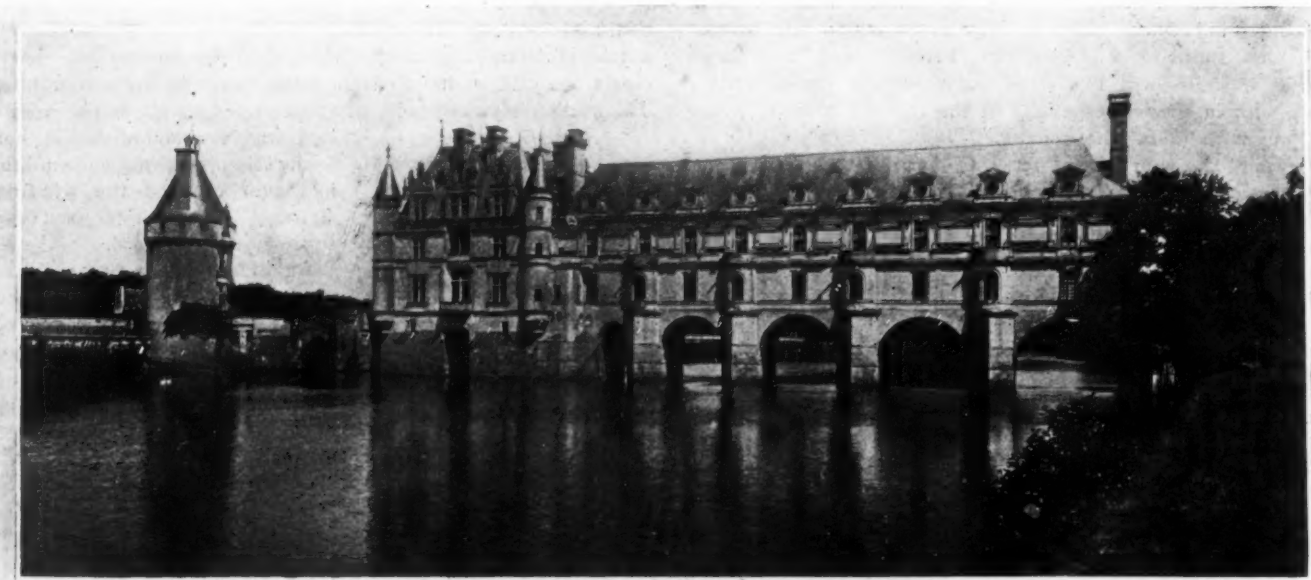
The next morning, bright and early, we took one of the famous Routes Nationale which make France the paradise of automobiling and tell vividly why the industry became a necessity for the French nation as a means of transportation.

The perfect highway, lined with stately poplars; wide, clean-cut and finished stretches straight ahead as far as eye can discern, through fields of tasseled wheat, varied by meadows stacked with new-mown hay, the sweet scent of which lingers in my nostrils; bright-hued poppies adorn the roadside, prodigally bestrewing even the fields with their glad beauty; all nature seems to breathe one harmonious

song that blends with the pleasing hum of our sweet-running Hotchkiss as it joyously rushes through the panorama of ideal country. On, on we fly in the opening blush of day, Old Sol just beginning to poke his red face above the horizon and warning us to hurry before he gets thoroughly to work, for 'tis a July morning and one must needs do his distance traveling early.

Of course, we slackened speed—as all good autoists should do—as we passed through the one-street villages that are met frequently, for in France even the farmers are segregated and few live in the open country. That early morning ride to Paris was the acme of automobiling, but rides like it are innumerable throughout France.

It is difficult for me to imagine anything more enjoyable than an automobile tour of France, taken in a sane manner, particularly through the château country, stopping as one will, lingering here, perhaps scurrying a bit occasionally, but with the sense of perfect freedom from rail travel with its schedules and other inconveniences. In the Springtime, some say, the château country is the most charming, though others put forth the probabilities of rain and insist that the Fall is the better period in which to visit Touraine. But Spring or Fall, the automobilist will find much to hold his attention and gratify his senses in this valley of the Loire, wherein the kings of old France used to play and kill.



CHENONCEAUX, WHOSE CONSTRUCTION WAS BEGUN IN 1496. IT IS ONE OF THE MOST INTERESTING OF FRENCH CHATEAUX.

## HOW ENGLISH SOCIETY ENJOYS THE AUTO

ON the occasion of the annual gymkhana of the Ladies' Automobile Club of Great Britain and Ireland, held at the grounds of the Raneleigh Club, London, June 30, the noted expanse of greensward bore an extremely gay appearance. The weather, which was rather threatening in the morning, cleared up towards the afternoon, and allowed the program to be run off without any undue interruptions. Competition was better than last year, as several women had taken advantage of the extension of the rules, permitting not only members, but their daughters and sisters as well, to drive.

Mrs. T. B. Browne was the heroine of the day, as she carried off two firsts and a second, but Mrs. Campbell Farrar, Mrs. Adams and Mrs. Manville also did excellently. The different items were most amusing, and the eagerness of the competitors called forth many a hearty laugh. Sir David Salomons, the Hon. Charles S. Rolls and Mr. J. Ochs acted as judges, while the Duchess of Sutherland, the club president, gave away the prizes. The grass track, on which the sports were held, is about three-quarters of a mile in length.

There were six events on the program, which were well contested, and resulted as follows:

Bending race over 250 yards, out course between the posts, home in a straight run.—First, Mrs. Manville, 17-20-horsepower Daimler; second, Mrs. T. B. Browne, 8-horsepower James & Browne.

Crawling race, 100 yards on top speed throughout.—First, Mrs. Campbell Farrar, 12-14-horsepower Cupelle; second, Mrs. H. Adams, 10-horsepower Adams-Hewitt.

Ball race, full course.—First, Mrs. T. B. Browne, 8-horsepower J. & B.; second, Miss May Howes, 9-11-horsepower Clement Talbot; third, Miss Bird, 8-horsepower Richard Brasier. The competitors had to drop balls into tubs placed around the track without slowing or stopping.

Police trap race, full course.—First, Mrs. T. B. Browne, 8-horsepower J. & B.; second, Mrs. Nevill Copland, 14-18-horsepower Spyker; third, Mrs. Herbert Lloyd, 30-horsepower Daimler. Mrs. Browne's driving came nearest the time stated by the committee; no watches, clocks, or speedometers were carried uncovered.



MRS. CAMPBELL FARRAR IN HER 12-14 H. P. CUPELLE.

Tilting at the ring, full course.—First, Mrs. Campbell Farrar, 12-14-horsepower Cupelle; second, Mrs. Manville, 19-20-horsepower Daimler. This contest provoked much amusement.

In the appearance division Mrs. Ernest Amsden's 18-24-horsepower Germain carried off a first prize for general touring suitability, and Mrs. Adams' 10-horsepower Adams-Hewitt won the park-going prize.



TILTING AT THE RING AT THE RANLEIGH CLUB, LONDON, AT THE GYMKHANA OF THE LADIES' AUTOMOBILE CLUB.

### GYMKHANA SPORTS AT ROCHESTER.

ROCHESTER, N. Y., July 14.—Genesee Valley Park, a beautiful resort in the suburbs of this city, witnessed the introduction of automobile gymkhana sports on the afternoon of July 7, under the auspices of the Rochester Automobile Club. There was a large attendance of social leaders notable in automobiling, and an interesting program was very successfully carried out. The first event was a scarf race, in which the contestant started a quarter of a mile from where the scarfs were suspended about six feet in the air. Each competitor had a spear about ten feet in length, and was obliged to spear one of the scarfs while going at a high rate of speed. There were three trials. Charles Reed won the first prize and Charles Stearns won the second.

The second race, or ring race, was on the same order, except that the rings had to be retained on the spear. Prizes were awarded to J. W. Cook and Dr. A. R. Fritz. The obstacle race was the feature of the day. Boxes, barrels, bags, any old thing the committee could lay its hands on, were used. There was some clever operating done in this race, which was awarded to A. M. Zimbrich, Charles Reed, Bert F. Seiler and Harry G. Strong. The potato race was novel and amusing. Dr. C. T. Graham won first prize and Dr. Fritz, second.

One of the most interesting and exciting of the events was the balancing feat. The stunt was to run a car up a board that is once and a half as long as the car and plenty wide enough. The board was arranged so that it balanced. Each contestant had a pail of water in the auto. The board was lowered at one end and the machine started up the incline. As it reached the center the board balanced for a second, and then the machine made a flying finish. The contestant making the best time and spilling the least water won the event. Harry G. Strong finished in best time and with the most water in his bucket. The judges were Charles P. Ford, William S. Riley and Samuel Wilder.

### BRITAIN'S TOURIST TROPHY RACE.

LONDON, July 10.—The entries at single fee for the Tourist Trophy race have closed, but entries will still be accepted by the A. C. G. B. I. until August 27, at a gradually increasing scale of fees. The event, booked for September 27 on the Isle of Man, is limited to bona fide touring cars only. The allowance of gasoline has been fixed at one gallon every 25 miles.

Although several entries are still pending, it is hardly likely that the list of forty-three cars will be very greatly increased; at present it consists of two Arrol-Johnstons (last year's winner), two Darracqs, two Rolls-Royce, two Minervas, one James & Browne, two Vinots, two Argylls, two Rovers, a Clement, a Brown, a Pipe, two Humbers, two Aries, a Peugeot, two Berliets, two Siddeleys, a Thornycroft, two Stars, two Deasys, a Scout, a Speedwell, two Climaxes, two Straker-Squires, and one each Swift, Hardman, Bianchi, Gladiator, and Metallurgique.

### STREET CARNIVAL FOR GOOD ROADS.

OCONOMOWOC, Wis., July 14.—One of the most novel functions that ever has been held for the advantage of automobilists has been planned by the wives and daughters of the wealthy Chicago and St. Louis men who have palatial summer homes on three lakes in this section of Wisconsin. The affair is to partake of the street carnival, and every dollar raised will be used to improve the roads of this section of Wisconsin. To that end the leading auto clubs within a radius of 200 miles of Oconomowoc are to be invited to participate.

The idea was suggested by Mrs. Lawrence Fitch, who was elected committee chairman, and the plans contemplate such affairs as are witnessed in some of the European countries. The main street of the town will be set aside for the purpose, and along this street will be erected booths, each having some kind of an amusement or performance.

Last year the automobile owners of the resort gave a flower parade, and it turned out to be one of the grandest spectacles ever witnessed here, and this year's event promises great success. The Business Men's League of the town will assist.

Leaf's new garage has just been completed here. One of the features of the enterprise is the high class of machinery that has been set in place for the purpose of repairs.

### HANDY RECORD BOOK FOR TOURISTS.

*The Automobilist's Daily Record of Runs* is the Title of a book "edited" by Charles Jarrott and W. M. Letts, of London, and published by the Frederick A. Stokes Co., of New York. The book is a journal, in which is to be written a condensed summary of each day's run to furnish a diary with the least amount of writing. It contains about 150 pages all alike, with space for writing in the data called for by such printed words as "Date," "Driver," "Where from," "Where to," "Distance and Route," "Average Speed," "Conditions of Road," "Condition of Weather," "Dangerous Corners," "Stoppages," "Adjustments and Repairs," "Gasoline Consumption," "Lubricating Oil," "Interesting Things Seen," and "Remarks." In addition there is a tabulated synopsis of the auto laws of the United States, and legal requirements in England and France, and a table of calculated speeds in kilometers and English miles.

### A NUTMEG DIFFERENCE OF OPINION

Editor THE AUTOMOBILE:

Question, which is fair: To assume that an automobilist is a gentleman until he is proven otherwise; or to assume that he is "otherwise" until he is proven to be a gentleman? There seems to be a difference of opinion on this question in the Nutmeg State, as shown in these two illustrations. ARTHUR K. L. WATSON.

Bridgeport, Conn., July 16.



AT WEST END OF ASH CREEK BRIDGE, FAIRFIELD, CONN.



AT EAST END OF ASH CREEK BRIDGE, BRIDGEPORT, CONN.

## DILIGENT DOINGS OF THE AUTO CLUB MEN

### Bay State A. A. Opens Its New Clubhouse.

BOSTON, MASS., July 16.—Last Thursday evening was a gala night in automobilizing circles in the Hub, the occasion being the formal opening of the new clubhouse of the Bay State Automobile Association, located at 282 Dartmouth street. This organization, comparatively young among automobile clubs, now has a membership of about six hundred, and a home of which it has every reason to be proud. When the house committee was instructed to investigate the question of a Boston clubhouse last fall, it was told to secure a place which would be convenient, and it has surely succeeded in this respect, for a better situated place for an automobile club would be hard to find. The house is on the left side of Dartmouth street, between Copley square and Commonwealth avenue. Dartmouth street leads directly to the automobile district at one end, while Commonwealth avenue is the main artery leading into the downtown section at the north end and giving access to the parkways and boulevards of the suburbs at the other end.

The clubhouse, which has been leased for a term of years, is a four-story structure, with basement, that was formerly a dwelling house. For the use of the association, however, it has been thoroughly renovated from top to bottom, the entire work having been placed in the hands of a prominent firm of furnishers and decorators, who were given carte blanche. The decorators certainly caught the right idea, for they have arranged every room in keeping with its purpose and with the character of the tenant.

The new clubhouse is handsomely furnished and spacious, and stands as a testimonial to the earnest efforts of the club's members to have a home of their own. A spacious hall at the entrance leads to two cafés on the first floor, the decorations of which are in a general way those of a German stein room. In the front room rich reds predominate in the coloring, and in the second room the effect is a dainty Delft blue. On the second floor are two large parlors which can be utilized for a general meeting-room, or for any other purpose desired for entertainment. These rooms are finished in automobile red and the floors are well covered with expensive Turkish rugs. On the third floor is the directors' room and two sleeping rooms, and on the fourth floor are more sleeping rooms and the servants' quarters.

While the affair was strictly informal, it was none the less very enjoyable, and the house committee was taxed to its utmost in looking after the welfare of the hundreds of visitors who took advantage of the occasion to attend the reception. During the evening President Lewis R. Speare introduced A. B. Seeley, the representative of Sir Thomas Dewar, who congratulated the club, and turned over to F. E. Stanley the Dewar trophy, which the latter won at Ormond last winter. Mr. Stanley accepted the cup, and in turn presented it to the club, which is to retain custody of the same until it shall have been won by some one else.

At 10 o'clock the clubhouse was formally turned over to the executive officers of the club by the house committee, through Mr. Fortescue, the committee's secretary, who handed President Speare the keys at the conclusion of an appropriate speech. The president responded gracefully, accepting the keys, thanking the committee for its excellent work, and in turn handed them back to Mr. Fortescue, thus officially leaving the house committee in charge.

The officials of the club are as follows: President, Louis R. Speare; vice-president, Harlan W. Whipple; treasurer, Herbert L. Bowden; secretary, J. Fortescue; directors, C. E. Fay, F. A. Hinchcliffe, J. H. MacAlman, E. A. Gilmore and J. C. Kerrison; entertainment committee, J. H. MacAlman, F. A. Hinchcliffe and W. T. Helfer; house committee, James Fortescue, George W. McNear, W. T. Helfere and H. D. Church.

### Chicago's Club Claims Glidden Entry Honors.

CHICAGO, July 16.—Twelve cars, belonging to regularly enrolled members of the Chicago Automobile Club, are entered in the Glidden tour, which is now in progress, and club members feel elated over the fact, stating that this represents a larger entry than from any other club in the country, and expresses the loyalty felt by the organization to President Farson and Secretary Gorham, who are also the president and secretary respectively of the American Automobile Association, under whose auspices the Glidden tour is conducted. The probability that the club will secure the Farson trophy offered to the club having the largest entry list in the tour is a source of general gratification in local automobile circles.

President Farson has recently been in communication with the Chicago park commission and the chief of police with a view of having the rules of the road more strictly enforced by both automobilists and drivers of horses. Being a strong advocate of the "rules of the road," he has vigorously set forth his views, and believes that if the rules were properly enforced there would be a great improvement in conditions, not only on the boulevards and parkways, but in the downtown congested districts. Mr. Farson says: "I have received some replies from the park commissioners, and they all seem to think as I do, that this is the only way to make the streets safe for pedestrians, as well as for vehicles. In New York and many other cities drivers are required to adhere to these rules, and the result is a source of wonderment to every Chicagoan who visits these places. We hope for an early enforcement of these rules here."

More than 250 seats have been engaged by the Chicago Automobile Club for the opening performance of "The Vanderbilt Cup" in this city, at the Colonial Theater, July 29. Extensive exhibits of automobiles in the lobby and promenades of the theater will add to the atmosphere, so that the enthusiasts will feel perfectly at home when they visit the playhouse.

The country crossroad signs committee of the Chicago Automobile Club has started to erect direction signs, the series covered with them so far being the route from Chicago to Joliet via Riverside. The first sign is at Austin avenue and Twenty-second street. Others are in preparation to be set up through the country in the vicinity of Chicago.

### Cleveland A. C. Completes Its Road Sign Work.

CLEVELAND, July 16.—The Cleveland Automobile Club completed the good work of erecting guide posts along the main route across northern Ohio. Secretary Goddard, with two assistants in a Maxwell car, made the run from Cleveland to Conneaut and the state line, erecting 43 guide posts and 27 danger signals. This makes a total of 97 guide posts and 53 danger signals on the main east and west highway between Freemont and Conneaut, 160 miles.

On the east trip Mr. Goddard found that some marked improvements were being made along this main highway. Between Wickliffe and Painesville the roads have been scraped and drained and are now in very fine condition. The worst stretch of highway in the entire main route from New York to Chicago has been counted as the few miles on either side of Ashtabula, O. The Ashtabula Automobile Club, recently formed, has been taking up the work and has greatly improved this district. The members adopted the rather novel method of pulling a scraper with a traction engine and found that this scheme of smoothing the highway worked very satisfactorily and that the work could be done rapidly.

The signs that were put up by the Cleveland Club are of a very substantial character. They are made of sheet iron covered with a heavy coating of enamel, the letters being dark blue on white ground. Distances are given in fractions and the directions are indicated by arrows. The signs bear the words, "Erected by the Cleveland Automobile Club," and below, in small letters, "Use Bell Telephones." This last is a tribute to the Bell Telephone Company, which permitted the Cleveland club to erect the signs on its pole lines and furnished one of its engineers to assist in the work of locating and erecting them. It has agreed to see that the signs are kept in position and, as far as possible, will prevent their being tampered with. There are a few signboards through this part of the country, as the state laws do not compel counties to maintain signboards as in many other states. For this reason the work of the club is calculated to win the favorable sentiment of farmers as well as traveling automobilists. Secretary Goddard had many favorable comments from the farmers especially relative to the merits of the danger signs, which were placed at all railroad crossings, bad hills and sharp turns.

Having thoroughly marked the main east and west highway at an expense of about \$300, the Cleveland Automobile Club is now planning to erect signs along some of the highways to the south and southeast, particularly the main highways to Columbus and to Pittsburg.

#### President McClure's Trophy Cup Awarded.

ALBANY, N. Y., July 16.—Joseph B. Taylor, of this city has been awarded the cup offered by President A. J. McClure, of the Albany Automobile Club, for the best record made during the recent second annual run of the club to Boston and return, which covered a period of six days, June 21-26, inclusive. The run was in the nature of a reliability contest, and daily reports were made out by each participant, recording breakages, adjustments of parts, ability to climb grades, etc., all of which had a direct bearing on the scores. It has taken some time to go into the details of the competition, but the committee in charge has conscientiously performed its work and made the award, as above stated, to Mr. Taylor, whose Locomobile showed a perfect score.

The winner was not alone, however, in having a perfect score, as President McClure's 60-horsepower Fiat had a clean record for the trip, but as he was donor of the cup, he did not consider himself or his car in the contest. Those next in line for honorable mention were F. W. Battershall, who drove his Maxwell; W. L. L. Peltz, in a Locomobile; J. P. Randerson, in a Pierce; John Newell, in a Peerless, and F. K. Robinson, in a Columbia.

The trophy is a solid silver loving-cup, handsomely engraved which, the night after the award was made, was suitably filled and drained by those participating in the run. President McClure is an entrant in the Glidden tour and is at the present time en route.

#### Asbury Park Automobile Club Organized.

ASBURY PARK, N. J., July 16.—At a meeting of automobilists summering in the vicinity of this city, it was decided to form an organization to be known as the Asbury Park Automobile Club. Since the date of the formation of the organization, July 9, several new members have been admitted and papers have been prepared for incorporation under the laws of the State of New Jersey. Permanent officers, with the exception of the secretary, Richard A. Martin, of North Asbury Park, have not been chosen. In addition to Secretary Martin, the membership list includes H. W. Lewis, George Martin, George Thompson, Guy Bates, Randolph Ross, and others. There are unexcelled opportunities in Asbury Park for the building up of a powerful automobile organization.

#### Worcester A. C. Gymkhana Games in August.

WORCESTER, MASS., July 16.—The scattered talk among members of the Worcester Automobile Club in regard to conducting another series of gymkhana games such as were had last year in conjunction with the Grafton Country Club on the preserves of the latter in North Grafton, has resulted in the board of governors taking notice, and deciding to hold another series some time in August. The games last year were very successful, but according to present arrangements, those to be held this year will far exceed those of last season, both in number and importance. The games will be conducted by the Worcester Automobile Club, but just where has not yet been decided.

The club has decided not to participate in the run of the New York Motor Club to Bretton Woods the latter part of this month. This decision was quite unexpected to many of the members.

#### CLUB DOINGS IN GENERAL.

FOND DU LAC, WIS.—The Fond du Lac Automobile Club held what was designated as a "family tour" round Lake Winnebago, July 14. Start was made at half-past eight in the morning, the members taking their families with them. The trip was 86 miles in length, and is one of the most enjoyable in the state of Wisconsin.

BINGHAMTON, N. Y.—Forty-two cars, furnished by members of the Binghamton Automobile Club, took 150 children from the Susquehanna Valley Home for an outing, Tuesday, June 10, and Thursday, June 11, about the same number from St. Mary's Home were entertained in a like manner. On both occasions the happy youngsters were paraded through the city in the automobiles, and then driven to the Casino, where a light luncheon and sweetmeats were served.

DES MOINES, IA.—Fourth of July was celebrated in this city by a hill climb under the auspices of the Iowa Automobile Club. F. Dusenbury, driving a Mason car, which is manufactured here, won the free-for-all class contest, the one for cars listing from \$1,050 to \$1,350, from 75 yards; and the winners of previous races handicap event from 30 yards. Mr. Morgan, in a Winton, won the event for cars listing from \$1,800 to \$2,500, from scratch, and Dr. Hyde, in a Franklin, won the event for cars listing from \$1,400 to \$1,750, from 75 yards.

PEORIA, ILL.—A number of members of the Peoria Automobile Club participated in a joint run with the Bloomington Automobile Club on July 4, to Boyle's grove, on the Mackinaw river. The roads were in perfect condition, and the Peoria delegation were enthusiastic over the reception accorded them by Mr. Boyle and his family, who reside at the grove. The grove is one of the prettiest spots on the Mackinaw river, is within easy distance of Peoria, and is a new destination for future club runs.

NEW YORK.—The board of governors of the Automobile Club of America, believing that one of the important functions of the club is to supply its members with reliable touring information, has appointed a clerk of the runs and tours committee to take charge of this department of club work, to which he is to devote his entire time. The clerk's duties will be the preparation and distribution of information concerning routes, hotels, repair stations, freight rates, licenses and registrations, customs formalities, and all necessary data for touring both in the United States and Europe. All of the information gathered by this bureau is at all times at the disposal of members and they are invited to make free use of same. All communications in reference to maps and touring should be addressed to clerk of the runs and tours committee, Automobile Club of America, 753 Fifth avenue, New York City.

## LETTERS INTERESTING AND INSTRUCTIVE

### Mr. Morgan Takes Issue with Mr. Edge.

Editor THE AUTOMOBILE:

[340.]—Referring to the letter of S. F. Edge in your issue of July 5, page 23, the writer would like to comment on Mr. Edge's remarks regarding hill climb tests.

It seems that the Automobile Club of Great Britain and Ireland have not formulated any scheme that meets with Mr. Edge's approval, so that he is looking abroad for something that will.

The very fact that in different climb tests in Great Britain there is no recognized formula, judging from the examples given by Mr. Edge, it shows that the leading club of Great Britain is as much at sea as we are in the United States as to the correct method of classifying machines in such tests.

Mr. Edge lays stress on the variations adopted in climbs in his own country and thinks that the stroke should be taken into consideration rather than the horsepower and price. This is the only recommendation made by Mr. Edge in his endeavor to solve the difficulty.

As a promoter of such events, I have endeavored to give the public a fair idea as to the merits of different makes of automobiles from a buying standpoint. I do not believe the public takes much stock in stroke or bore of a machine, but they are vitally interested in the price and performance of a machine. They want to know what a machine is capable of in the different price classes, and it is quite plain to them that if an automobile, say in the one, two or three thousand dollar classes, beats all others it is a good machine to buy. Therefore price and performance interests the public more than engine power, as per catalogue, or the stroke or bore of an engine.

I do not overlook the fact that manufacturers wish to see correct classification, and I have always tried to get their views, which, however, are very seldom uniform. In stock cars price seems to be the logical way out of the difficulty, but when it comes to racing or special built cars it is a different thing. The same problem presents itself when it comes to beach, or, rather, flat racing propositions, and I feel sure that there is room for improvement in the classification of racing cars over that of weight only. In fact, I am now getting the opinions of various authorities in regard to the latter, and up to now no two authorities have agreed.

If Mr. Edge gave us some definite plan of classification it is doubtful if his views, however helpful, would meet with the approval of many of his brother manufacturers, but I feel sure that he is trying to get some enlightenment and correct classification in such tests. Tournament promoters do not always agree with the recommendations of manufacturers, because there is a conflict among makers as to correct methods of procedure in classification, but their views are to be entitled to respect, because of their more thorough knowledge of engineering construction. The chief aim of the tournament promoter is to provide interesting contests and not one-sided affairs brought about chiefly because of incorrect and impossible classification. Cylinder capacity may be a good plan when taken into consideration with weight. I shall be glad to see "The Automobile" stir up this question, as something must be done when it comes to flat racing where price is not considered.

New York City.

W. J. MORGAN.

### Worcester Protest Against Buick Disallowed.

Editor THE AUTOMOBILE:

[341.]—The Buick car which I drove in event 6 at the Dead Horse Hill Climb, Worcester, Mass., was protested on the ground that it was not a stock car. Herewith is copy of letter from Referee F. R. Speare, explaining why the protest was not allowed:

Boston, June 19, 1906.

J. P. Coghlin,

President Worcester Automobile Club,  
Worcester, Mass.

Dear Sir:—Referring to protest of Buick car entered by Mr. Koehler, I would say that this protest is not allowed. This car was protested as not being a stock car according to specifications, and particular attention was called to the bore and stroke of the cylinders. Acting under my instructions, this car was carefully measured and the case was investigated, and no evidence has been found that the car was tampered with in any way after it ran in the races until it was measured by competent authorities at Worcester. Therefore I am unable to allow this protest, and inclose you my check for \$10 received with Mr. Owen's protest.

Respectfully yours,

LEWIS R. SPEARE, Referee.

I would also like to add that my protest against the driver of the Reo car, Mr. Thomas, on the ground that he was a professional because of trade connections, has been allowed, it being shown that Mr. Thomas holds a very important position at the Reo factory.

Newark, N. J.

H. J. KOEHLER.

### Thinks Both Bore and Stroke Should Be Limited.

Editor THE AUTOMOBILE:

[342.]—General surprise must follow the announcement of the Sporting Commission of the Automobile Club of France stating that it has decided to abandon the weight limit for racing cars for 1907, and the only limitation on the cars will be limiting the piston head surface to an area represented by a bore of 150 mm. for four cylinders. This seems to me such a retrograde step and an absolute admission by the French Club that French constructors are unable to make cars strong enough within the thousand kilos weight, and a return to the days of monsters of a ton and a half, and I consider that this new rule is a most serious and detrimental step in the whole movement of automobilism.

I thoroughly agree with the limitation of size of the engine, but not only should the bore be limited but also the stroke, and there also should have been a limitation of both minimum and maximum weights, so that constructors would have had to have got their speed by excellence of workmanship and anti-friction devices, instead of as now merely increasing the cubic capacity of their engines by lengthening the stroke and then making the parts abnormally heavy to withstand the rough and cruel blows struck by these large cubic capacity cylinders.

Surely this rule must have been brought in in a moment of panic after the failure of so many French cars in the Grand Prix Race, and I hope that saner counsel will prevail.

S. F. EDGE.

London, England.

### A Porto Rican Objects and Corrects.

Editor THE AUTOMOBILE:

[343.]—I have read in your June 7 issue the story of "Across Porto Rico in an Automobile." This article is so full of inaccuracies and misstatements that I feel in justice to the island a few corrections should be made. To take up the statements in their order:

No municipal ordinance restricting the speed in San Juan to 17-8 miles per hour has ever been passed; in fact, no speed regulations of any kind exist on the island. Again, the climate is described as being between 90 and 100 degrees in the shade. According to the U. S. Weather Bureau Report for the year 1905 the mean temperature of the entire island was 77.2. In describing the grades on the military road, the writer speaks in one instance of a 20 per cent. grade and in another of a 22 per cent. grade. On the entire military road there is no grade which exceeds 14 per cent. and the majority are below 10 per cent. He refers to Albonito as having an elevation of 2,800 feet. The highest point on the entire military road is 2,030 feet.

I trust that you will make these corrections in order that prospective tourists may not have an exaggerated idea of the steepness of Porto Rican grades.

San Juan, Porto Rico.

A. N. FRAZIER.

### Foreign Performances of an American Car.

Editor THE AUTOMOBILE:

[344.]—The Maxwell Speedster was entered in the run from London to Edinburgh and return. It was driven by the writer, and completed the entire journey of 800 miles without an involuntary stop, except for one puncture, in 40 hours running time. A gold medal was awarded.

The same car was then run to Glasgow, a distance of 400 miles, then completed the Scottish Reliability Trials of 671 miles, through the Scottish mountains and passes, and made the return journey from Glasgow to London with only a stoppage of three minutes for mechanical adjustments. The 16-horsepower touring car also completed the latter journey and came through with an absolute non-stop record.

F. W. PECKHAM.

London, England.

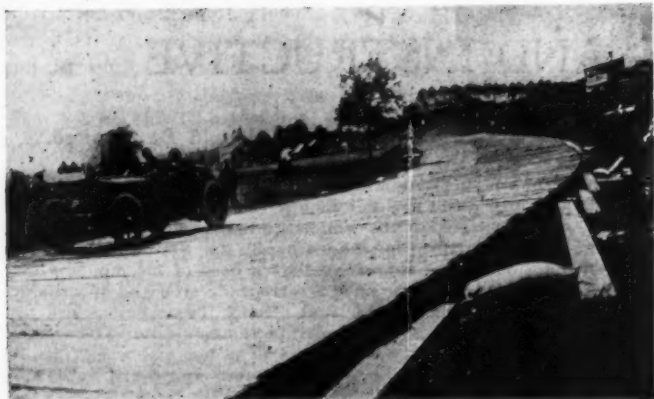
### The Alleged Roads of Eastern Maine.

Editor THE AUTOMOBILE:

[345.]—Please inform automobilists through your valuable magazine that the roads in eastern Maine are simply awful—full of rocks, ruts, holes, and in some places logs partly exposed where they cover crossways or drains. In talking with one of the road commissioners in this section he told me the farmers objected to having the roads put in good condition, as they wanted to keep out the autos, although they admit the roads are so bad they spoil their wagons.

G. S. POMEROY.

Pembroke, Me.



PIERRY ON BRASIER ON PLANKED PORTION GRAND PRIX COURSE.

### AFTERMATH OF THE GRAND PRIX.

PARIS, July 10.—Very probably several of the French racers in the Vanderbilt race will be fitted with mobile rims as used in the Grand Prix. None of the five cars used patent rims in the French race, but Albert Clement admits his folly and will be equipped in the Vanderbilt as his two companions were in France. The Darracq people, too, called in the inventor of the rims immediately the race was over and put his appliance to severe tests. It is exceedingly likely that Hemery's wire wheels will be replaced by wooden ones with the labor and time-saving appliance. The Hotchkiss wire wheels proved the only weak part of their car, and it is not unlikely that they will change to the new method before crossing the Atlantic. The Panhard and De Dietrich people were both unable to use mobile rims on account of the weight limit, and should they make any change a saving in weight will have to be effected in some other part of the car.

Of the thirty-two cars which faced the starter in the Grand Prix none was more feared than the three Darracq, yet not a single one finished the race. Wagner had trouble with his lubricator, and was put out of the running by the breaking of his main feed pipe on the second round. Hanriot had water cooling troubles which led to a cracked cylinder, and Hemery, the favorite of the race, had to spend two or three hours on his valves on the commencement of the second day. Le Blon broke a wheel of his Hotchkiss on the first round, repaired it, and continued running, but was obliged to retire on the fifth round on account of the repair giving way. Saleron also broke a wheel while taking a sharp turn, and Shepard, who had obtained fourth position on the first day, took a curve too quickly on his eighth round and suffered the same fate as his two companions.

Of the two Bayard-Clement cars which failed to finish, that of De la Touloubre had a loose gear-box and ignition troubles,



PADDOCK WHERE THE RACING MONSTERS WERE KEPT.

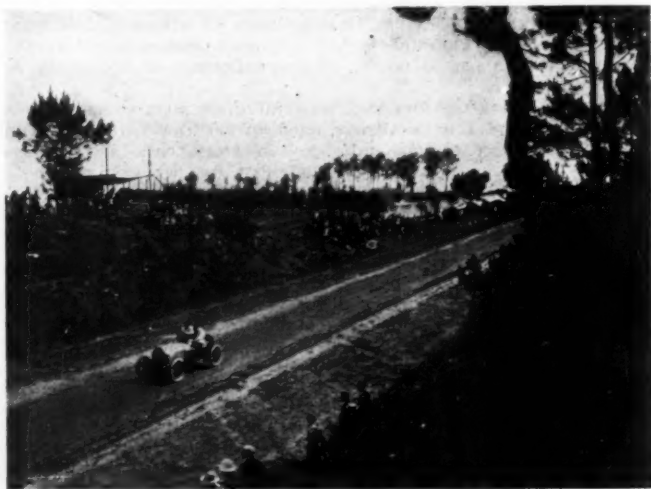
and Villemain's car was retired by the giving way of a spring hanger. Tart's Panhard racer was put out of the running on the fifth round by the breaking of the chassis, and the machine driven by Teste broke a fork on the steering wheel, causing the front wheels to fly off and the car to dig violently into the ground. Teste's injury was a broken thigh.

The two Itala cars driven by Baron de Caters and Fabry had similar troubles. A tire burst on Baron de Caters' car and flew off the rim; before the machine could be stopped the wheel was ruined and the race had to be abandoned. Fabry missed a turning and overthrew his car, without, however, suffering personal injury.

Weillschott, the Fiat driver, was also put out of the race by the car overturning while leading on the sixth round. Chevalier Florio burst a tire, and before he could stop had so injured his rim that he was unable to continue the race and came back to the grandstand on a bicycle.

Riches's Renault was put out of the race through the overturning of the car, and Edmond's machine had to withdraw from the contest owing to injury to the driver's eyes. Rigoly had a leaking radiator.

None of the Lorraine-Dietrich cars finished the race, Duray and Rougier owing to tire troubles, and Gabriel because of the breaking of a rod on the first round.



MARIAUX ON MERCEDES AT LA BELLE INUTILE.

### KEENE IN THE ARDENNES CIRCUIT.

PARIS, July 3.—After the Grand Prix the most important speed contest in Europe is the one on the Ardennes Circuit, in Belgium, on August 13. The list of engagements at ordinary fees closed on June 25. The cars at present engaged are:

- 1, Panhard & Levassor (Heath); 2, Panhard & Levassor (Tart); 3, Panhard & Levassor (Le Blon); 4, Panhard & Levassor (probably Henri Farman).
- 5, Darracq (Hemery); 6, Darracq (Wagner); 7, Darracq (Hanriot); 8, Darracq (——).
- 9, Fiat (Lancia); 10, Fiat (Nazzaro).
- 11, Itala (Cagno); 12, Itala (Fabry); 13, Itala (——); 14, Itala (——).
- 15, Lorraine-Dietrich (Gabriel); 16, Lorraine-Dietrich (Rougier); 17, Lorraine-Dietrich (Duray); 18, Lorraine-Dietrich (Sorel).
- 19, Brasier (Baras); 20, Brasier (Barillier).
- 21, Bayard-Clément (A. Clément); 22, Bayard-Clément (Villemain); 23, Bayard-Clément (——); 24, Bayard-Clément (——).

Commenting on the Grand Prix, the *Car* says in its story: "The race has induced the Automobile Club of France to step down from its pinnacle, throw overboard its weight limit, and adopt a limited measure of cylinder capacity as the standard for future contests."

## WHAT TO DO WITH THE CHAUFFEUR

WHERE to locate the chauffeur on an automobile with its full equipment of travelers is a question that has presented itself to every person who travels much by road. Most owners prefer to drive their own cars, and to place the chauffeur by their side gives him a position of importance which is no less

desirable than reclining in lordly ease in the tonneau. On the footboard, the only other available place, the man is in danger of being thrown to the ground, and, besides, is never very comfortably placed.

A chauffeur's seat which is now being used on large French touring cars somewhat solves the difficulty, for the man monopolizes neither the seat by the driver nor one of the inside places, and, besides being comfortably seated, is well placed for attending to the engine.

As will be seen from the illustration, which presents a Martini owned by M. Cuenod, a well-known Paris automobilist, the seat is placed above the footboard on a line with the two front seats, and is supported by a leg running down to the footboard. It is upholstered in leather in harmony with the rest of the car, and can be removed in a few minutes by taking out a couple of screws. Another feature of this car is an emergency bed for carrying a

wounded person. To bring this bed into use the left front seat, which is hinged at its lower edge, is swung forward, and in the space thus liberated a folding couch is opened out and united up to the rear seat of the car. The bed thus obtained is two meters long and the time necessary to effect the change is but two minutes.

An umbrella and stock basket is shown at the edge of the dash. At the same place is a cord for opening the exhaust, a matter which is attended to by the mechanic.

### A LAW THAT DEFEATS ITS OWN ENDS.

BERLIN, July 10.—Automobilists contemplating a run in Germany should not forget that under the regulations which came into force on July 1 a tax of fifteen marks (\$3.75) has to be paid on every machine crossing the frontier. For this sum a five days' permit is granted. For five to thirty days the tax is increased to forty marks (\$10), and should the car stay over a month the full tax of the country must be paid. Evasions of the law will be very severely punished, fines varying from five to ten times the yearly tax being imposed. In serious cases the authorities have the right to confiscate the machine.

A glance at the German automobile regulations shows that the annual tax is rather high, being: 6-horsepower machines, 25 marks and 2 marks per horsepower, total 37 marks; 10-horsepower machines, 50 marks and 3 marks per horsepower, total 80 marks; 25-horsepower machines, 100 marks and 5 marks per horsepower, total 225 marks; above 25-horsepower, 150 marks and 10 marks per horsepower, total 650 marks for a 50-horsepower.

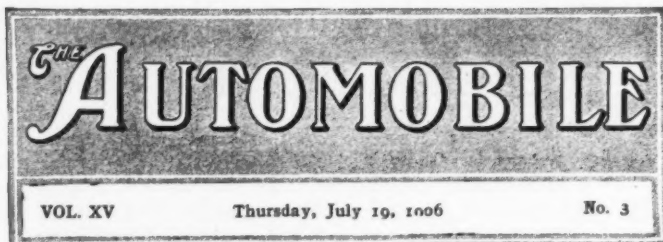
A stay of over one month in Germany with a 50-horsepower machine would cost the owner about \$170 in taxes alone. Naturally the new regulations are not looked upon favorably by hotel-keepers, for it is safe to predict that, rather than pay the tax, many visitors will prefer to leave the country within a month.



HOW THE CHAUFFEUR IS PLACED.



HOW THE CAR CAN BE TRANSFORMED INTO AN EMERGENCY BED FOR SICK OR WOUNDED PERSON.



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#### The Annual Tour of the A. A. A.

Of all automobile tours ever attempted in this country, none has ever exceeded in magnitude the annual event of the A. A. A., now being conducted under the direction of the Touring Committee of the national organization. The task is a prodigious one, and particularly so because it essays to embrace an important contest in its running—the possession of the trophy offered by "Globe-Girdler" Glidden, who probably has covered more international miles in an automobile than any other man living.

That the rules for the competitive division of the tour did not suit all participants is not surprising, for even the N. A. A. M. committee rated the task as beyond its satisfactory solution. The A. A. A. officials are conscientiously making the best of a difficult job and doing their work in an unbiased manner that deserves much praise and scant criticism. Just put yourself in the other fellow's place, reckoning with the varied trade interests involved in this winning of a trophy, realize that the event is a long and tiresome contest—not a pleasure jaunt, except indirectly for those who are engaged—and you may comprehend and appreciate the labors of Chairman Deming and his associates, whose fairness will bear the closest scrutiny.

The progress of the tour across New York State served to call attention again to the deplorable roads of the richest commonwealth in the Union. The Quebec section is in a foreign country, and of sparsely-settled and little-traveled northern Maine only ordinary roads may be expected. But the White Mountains country will illustrate the progressiveness of the Granite State.

Let us not strike a balance on this 1906 A. A. A. tour until it has terminated at Bretton Woods and all the figures are computed and the winners announced. Its general good to automobiling should be a generous measure.

#### Proper Road Surface for the Automobile.

Increased use of the highways as a result of the rapid growth of automobiling necessarily will wear out the roads, and a fast-moving vehicle, whether motor-driven or horse-drawn, will inflict more wear and tear than will a slower-moving one. The mileage exacted from the highways coincident with the boon of the automobile—and what a distance destroyer it is!—has multiplied many-fold the demands on roads which have met former conditions with reasonable longevity.

But while we gain time and save money through the automobile's traveling accomplishments, we can no longer shut our eyes to the fact that its enormous aggregate of mileage and greater speed are factors which must be taken into account in the building of new roads and the maintenance and remaking of those already constructed. The increased usage of the highways at once explains why in some localities they are wearing out more quickly than they did before the automobile appeared on the scene, though it must at the same time be admitted that present road surfaces will bear improvement to meet the new situation.

Crude oil has been tried successfully as a palliative for the dust problem, and a tar dressing has been found effective, despite the fact that it did not answer for the Grand Prix course in France, owing, perhaps, to the manner of its application. Westrumite and other preparations have served to some degree. Nevertheless, these remedies are only remedies, and, while they will cure partially, it is the opinion of a considerable number that our road engineers must take the automobile into serious account in their future building of the highways. And the automobilist may be able either to assist or to advise definitely on this most pertinent subject, the importance of which cannot be overestimated. It would be an excellent move on the part of the A. A. A. Good Roads Committee to make this subject one of immediate study, with the idea of participating actively in the highway conventions of the various states. The day is near at hand when automobilists will be in a majority as road-users, and their attention to roads building even now is essential to themselves.



#### Suggested Changes in Classification.

Following the Grand Prix comes the suggestion from France to abolish the classification by weight and substitute for it a rule limiting the bore of a four-cylinder motor to 150 mm. Almost all the cars in the race had motors with larger cylinder bore, the largest being the Lorraine Dietrich, with bore of 185 mm. The bore of the winning car (Renault) was 165 mm.

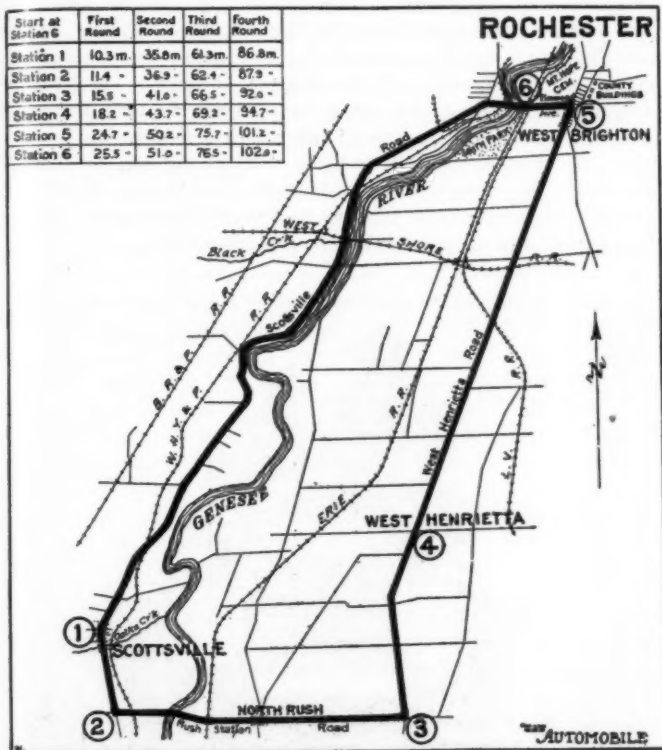
There is no question connected with automobile racing about which there is a greater difference of opinion than classification. The French, who have been the leaders in racing, early recognized that if the best results are to be obtained the designer must be left a free hand. In the earlier days a weight limitation, while preventing the construction of monstrous and unwieldy machines, indirectly limited the size of the motor, for size implies weight. Yet the weight classification allowed the greatest possible latitude; the distribution of weight was entirely in the designer's hands. The extraordinary improvement in materials has permitted the increase of motor dimensions—the total car weight remaining practically constant—until now the machine has attained a capacity for speed undreamed of in earlier days.

Possibly more extended consideration will show points of advantage in the substitution of bore for weight restriction, but at first thinking the change does not make for progress. With a weight limit removed no doubt many heavier machines would appear, and the tire problem would become more difficult than ever. Advocates of the limited motor dimensions point to the relatively enormous horsepower developed by the biggest machines to-day, but if the records of past races are examined it will be found that the most powerful machines have seldom or never won. A motor too big means some other component too small under a weight classification, and so elimination proceeds automatically.

## ROCHESTER'S LABOR DAY RACE.

ROCHESTER, N. Y., July 16.—The American Touring Car Derby Commission will conduct the Labor Day race in Monroe county. Behind the Commission is the Rochester Automobile Club, which has at its back the New York State Automobile Association. W. J. Morgan, the well-known manager of automobile events, has been engaged to look after the details of the 100-mile race, which is to be limited to touring cars. The course is considered an excellent one, entirely within Monroe county, and between \$6,000 and \$7,000 will be expended in widening the road and preparing it for the race. Crude oil will be used in laying the dust.

Recently President Oliver A. Quayle, of the New York Automobile Association, and Secretary F. H. Elliott went over the



MONROE COUNTY COURSE FOR 100-MILE LABOR DAY RACE.

route with Mr. Morgan and officials of the local club. The full consent of the authorities has been obtained to close the road to traffic during the race.

The 100-mile race—to be exact, 102 miles—will be limited to twenty-five contestants. The entry fee will be \$300, and the trophy will be a cup valued at \$1,000. A limit of 60-horsepower is placed on the cars, which will be required to carry both driver and mechanic.

In addition to the big race, there will be one-mile straightaway contests for three classes of cars: cars under \$2,000, cars between \$2,000 and \$4,000, and cars between \$4,000 and \$6,000. In order that no specially constructed cars will be entered, entrants will be obliged to enter cars at catalogue price and accept the first offer made at these figures. The straightaway winners will receive silver and bronze medals.

## CHICAGO'S JULY RELIABILITY RUN.

CHICAGO, July 14.—The Chicago Automobile Trade Association and the Chicago Automobile Club have set Thursday, July 26, as the date for holding the reliability run over the Elgin-Aurora course. At 9 o'clock the first car will be sent from in front of the Logan monument on Michigan avenue, and the rest will be dispatched at intervals of one minute. There will be four classes in the event—No. 1, for cars listing at \$1,000; No. 2, for cars over \$1,000 and under \$1,750; No. 3, for cars over \$1,750 and under \$2,500; No. 4, for cars over \$2,500.

## PENNSYLVANIANS AROUSED.

PHILADELPHIA, July 16.—Despite the existence of the Pennsylvania Motor Federation, there was organized here last Wednesday, at the Hotel Majestic, a body whose announced purpose it is to bring about a "modification of the existing automobile laws." The new association is as yet unnamed. The organizers, among whom were representatives of the White, Ford, Knox, Locomobile, Rambler, Winton and Acme local establishments, believe that something should be done—and at once—to put an end to the petty persecutions of the official underlings to whom is assigned the duty of enforcing the observance of the Pennsylvania automobile law.

The first business of the meeting was the effecting of a temporary organization, which was done by electing George H. Smith, of the White concern, president, and I. J. Morse, of the Locomobile, secretary. These officials will be superseded at the next meeting for permanent organization. It was pointed out that automobilists are rapidly becoming the prey of the horde of over-officious constables, to whom each arrest means a certain percentage of the money paid for fines. Automobilists are subjected to restrictions which horse drivers, bicyclists, motorcyclists and motormen defy daily, even hourly. Every picayune town and village in Montgomery county, which adjoins Philadelphia county, has its local law, which, under a recent decision of the State Supreme Court, must be observed despite many points of conflict with the state law, which was avowedly designed to supersede all others and to secure uniformity throughout the commonwealth.

Instances are numerous where in towns having a 10-miles-an-hour law automobile drivers have been fined for going at a rate estimated at 15, 13, or even 11 miles an hour!

## JAP CLEMENS TOOK THE RISK.

INDIANAPOLIS, IND., July 16.—Running the risk of killing himself and a mechanic named Murphy, Jap Clemens, a driver for the National Motor Vehicle Company, of this city, wrecked the big six-cylinder 60-horsepower National racing car Sunday evening in order to save the life of a farmer.

Clemens and his mechanic were testing the new racing car, which had left the factory the day before. They ran to Knightstown over the National road, a distance of about fifty miles, and then started back. As the road was clear, it being late in the evening, Clemens decided to let the big car out and give it fair opportunity to test its speed. Soon the racer was going a mile a minute over the smooth surface of the road.

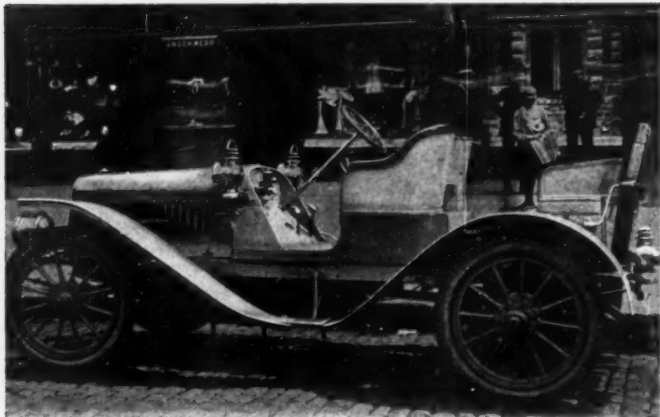
Just outside of the city limits of Indianapolis Clemens encountered a young farmer, endeavoring to ride a bicycle. The man and his wheel were occupying both sides of the road, and Clemens saw that the destruction of his car and possible death or the killing of the farmer was inevitable. Steering the racing car at a direct right angle, Clemens, his mechanic and the car plunged down a fifteen-foot embankment. Clemens kept his seat by holding to the wheel. Murphy, however, was thrown out and painfully injured. The car was damaged considerably, a front wheel and the radiator being broken, but it is said that the racing car will be ready for service in a few days.

## J. FRED BETZ TO DRIVE MAXWELL CUP RACER.

A wealthy and well-known Philadelphia automobilist, J. Fred Betz, 3d, will drive the Maxwell racer in the American Elimination for the Vanderbilt Cup race. Mr. Betz has been an automobilist several years, a frequent contestant in the Cape May and Atlantic City races, and owns the Mors Car with which Henry Fournier won the Paris-Berlin race. Mr. Betz competes as a member of the Cape May Automobile Club, which he assisted in organizing. The Maxwell-Briscoe Motor Company is building two racers, one of eight cylinders and another of twelve, it being the intention to use the one which shows up to the best advantage in the preliminary try-outs.

### A NEW TYPE OF SPEED CAR.

The Cleveland Motor Car Company, of Cleveland, O., has just delivered to A. L. Garford, of the Garford Company, of Elyria, O., the first sample of a new model, which will be built for next year, known as the Model F. speeding car. The mechanism is practically the same as that of the Model F 30-35-horsepower car of this year, except that the wheelbase is a trifle longer. It is geared

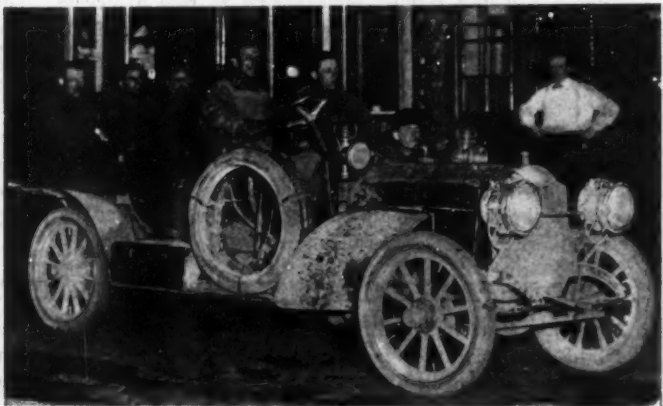


A NEW TYPE OF CLEVELAND SPEEDING CAR FOR 1907.

higher than the standard car, the gear ratio being 2 1/2 to 1 instead of 3 to 1, and is claimed to have a speed possibility of over sixty miles an hour. The hood is made considerably longer than on the touring car, and it covers a vertical water tank placed back of the engine, giving increased circulation. The steering mast is given more rake than in the standard car and is longer. The front seat is built in two separate parts and there is a seat in the rear for the chauffeur. A wide flaring fender, continuous in one piece, is carried over both wheels. The Cleveland company is turning out several of these machines for parties in various parts of the country and, judging from the favorable comments and inquiries for a speeding car of this type, the model will be a very popular one another season.

### A CONSISTENT RUNNING 1907 CAR.

May 31st the second experimental model of the 1907 Packard was driven from Detroit to Chicago and back to Detroit in the total elapsed time of 22 hours and 50 minutes, and gave a fine example of consistent running. The net running time for the round trip was 20 hours, 35 minutes and 40 seconds, representing an average speed of approximately 30 miles per hour. The party



1907 PACKARD ON DETROIT-CHICAGO-DETROIT RUN.

consisted of C. B. Penney, of Buffalo; J. W. Tarbill, of Cincinnati; Fred Graves, of Boston; "Eddie" Roberts, assistant superintendent of the Packard factory, and S. D. Waldon, sales manager of the company. Start was made from the City Hall in Detroit at midnight and the store of Pardee-Johnson & Hamill

Company, Chicago, was reached at 11 A. M. One hour was spent replenishing fuel and other supplies, and the return trip started at noon. At 10:50 that night the party circled the City Hall in Detroit, having covered 606 miles with no adjustments, replacements or repairs of any kind except to tires.

The roads for the first 190 miles are below fair for the most part; they are extremely sandy, full of rocks, and in the early part of the run combine with hills with loose sand covering the approaches. Only after South Bend was passed were the roads found sufficiently good to permit of high speed. Over level, straight stretches the speedometer frequently showed from 60 to 65 miles per hour and helped to raise the average speed over the whole trip.

The gasoline consumption upon this double headed trip was 11.21 miles to the gallon. There were five passengers all of the way and six passengers over the last 114 miles. There was in addition extra gasoline carried for emergency and a complete set of extra tires with full complement of tools. The gasoline consumption makes a very good record when the load, the speed and the road conditions are all taken into consideration.

It is of further interest to know that on the trip to Chicago the total time stopped amounted to 46 minutes and 20 seconds. On the return trip from Chicago to Detroit the car was stopped for supplies and all other purposes only 28 minutes.



HENRY FOURNIER OF PARIS DRIVING A RAINIER.

This well-known ex-pilot of racing cars is now a substantial figure in the French industry, his garage, 48 rue D'Anjou, being one of the largest in Paris. Recently M. Fournier added to his line an American car, the Rainier, which he uses a great deal in driving about Paris. This is considered by many as another indication of the near approach to the much prophesied "American invasion" in automobiling.

### NEW ADDITION TO FRANKLIN FACTORY.

SYRACUSE, N. Y., July 16.—The H. H. Franklin Manufacturing Company last week decided upon improvements of its big plant, to cost about \$50,000, and on that very day the work was started. The plans include a new five-story building, 65 feet wide and from 100 to 130 feet long. The first floor will be ready for occupancy in thirty days, and the entire building is to be completed by September 10. It is to be used for general manufacturing purposes. With this new building the company will be enabled to increase its output to 2,000 automobiles a year and give employment to 1,600 men. There are now 1,000 men in the factory and 100 men and women doing clerical work. It is but four years ago that the first of the present series of buildings on Geddes street was erected. Another big tract is still available.

## THE NEW AEROCAR RUNABOUT.

Several exceedingly interesting features have been incorporated in the new touring runabout for the season of 1907 manufactured by the Aerocar Company, of Detroit, Mich. The machine is of 20-horsepower, with an air-cooled motor, and is designed as a high-speed vehicle for two passengers only; in anticipation of its being used for long, continuous runs, the gasoline tank holds slightly more than twenty-four gallons, some of which is in a small reserve tank and is intended to be used only in case of emergency. To open the cock which allows the emergency supply to flow to the carbureter it is necessary to use a wrench.

Special attention has been given to the control mechanism of the car, and the work of the driver is made as pleasant and simple as possible. A smooth-working clutch is fitted, and the clutch pedal is interconnected with the timer, so that the ignition is retarded when the clutch is withdrawn and racing of the engine from this cause is prevented. When the clutch is let in again, however, the engine automatically increases its speed. A forward motion of the clutch pedal sets the hub brakes when the clutch is out of engagement, and the pedal is caught in a notch provided for the purpose. The pedal is released from the braking position by a tilting motion of the foot. The right-hand pedal operates the transmission brake, but this is intended only for emergency use, the hub brakes being intended for regular work, so that the clutch and main brake are under the control of the left foot of the driver. The gear shifting lever is in the usual side position, but is inside one of the high doors with which the car is fitted. These doors are a feature of the car, and are intended to protect the driver and his passenger from draughts and dust. Ample protection from flying mud and water is given by the long, wide mud-guards, which are made of a single piece of charcoal iron each. The manufacturers make the interesting statement that at high speeds these mudguards act as aeroplanes, lightening the front end of the car and not only relieving somewhat the load on the front axle and tires, but also making the steering very easy.

The intention of the designer is that the car should be driven almost wholly on the throttle, and with this in view the carbureter is designed to give a perfect mixture at all speeds. Three jets are employed, and the manufacturers state that once the proper adjustment is made, changes in the throttle opening will not affect the mixture, however rapid the changes may be. All ordinary

work is done on the high gear. There are no springs of any kind in the carbureter.

Silent running is an object the designer has had in view in constructing the car, and the results obtained are said to be excellent, the noises often made by air-cooled motors being missing, to the satisfaction of the driver. Another thing that the occupants will appreciate is that the shape of the body has the effect of causing a down-draft behind the car, keeping the dust down where it belongs.

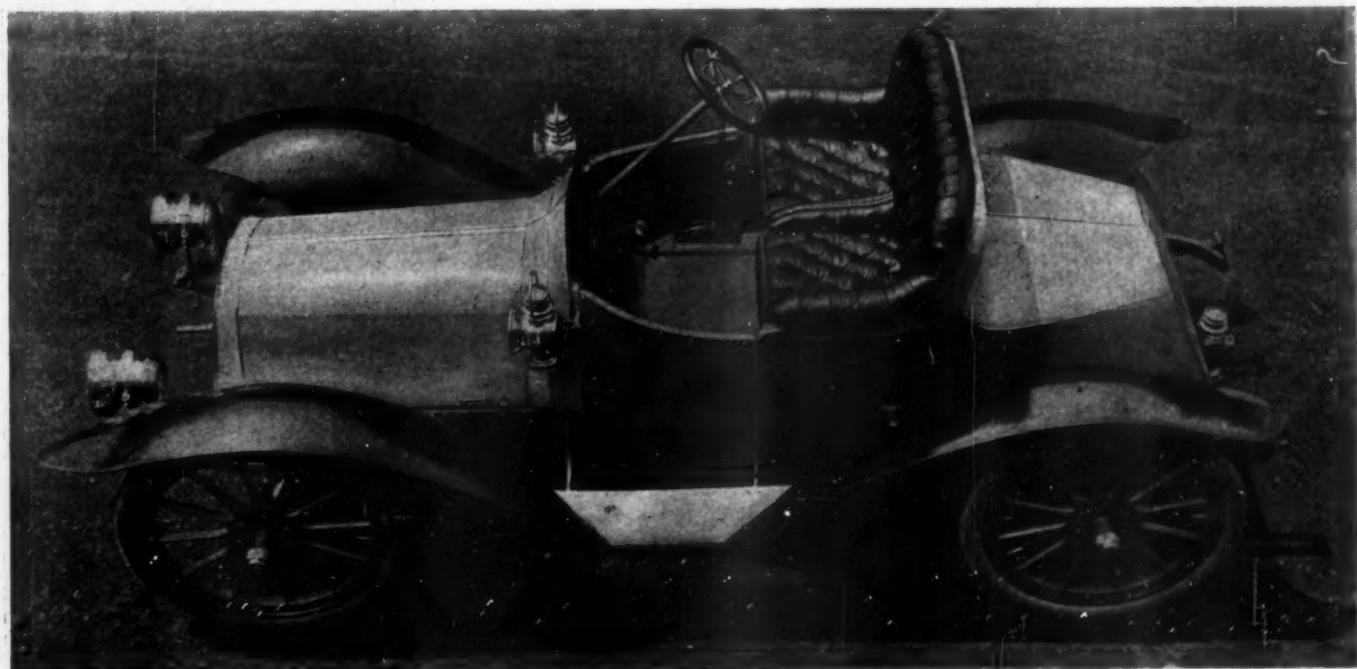
In the finish of the body a peculiar surface is imparted which has the effect of shedding water as if oiled. To keep the paint-work looking like new it is only necessary to wipe it with an oily cloth, the usual delicate coach-washing process not being necessary.

As the engraving shows, the appearance of the car is not only unusual, but attractive. Judging from the ample spread of the mudguards, which are continuous from ahead of the front wheels to behind the rear wheels, and the high side doors fitted for the protection of the passengers, the car should be an unusually good navigator of muddy roads. The springs are long and easy, and the position of the seat between the front and rear wheels should give the passengers the easiest riding possible. The machine is one of the very earliest of the 1907 models to be seen, and one of the most interesting.

## TRADE NEWS FROM PITTSBURG.

PITTSBURG, July 16.—The Vestal Shock Absorber Company, which has just applied for a Pennsylvania charter, has been formed by O. E. Vestal, Harvey A. Miller and A. G. Nesbitt, and will be in the market next season fully equipped to supply the trade with the new shock absorber which Mr. Vestal has patented. Mr. Vestal was for two years sales manager of the Keystone Automobile Company, in the East End.

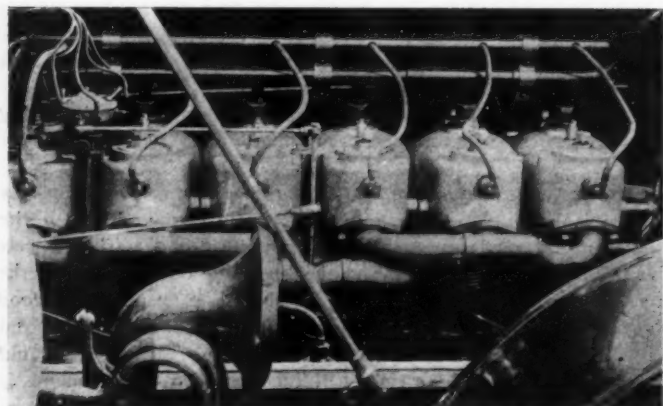
The Pittsburg Auto Express Company, capital \$25,000, has received a Pennsylvania charter. Its incorporators are Russell Thayer, of Philadelphia; S. C. Jackson, W. Earle Richmond, Frank H. Clark and F. A. Stoelzing, of Pittsburg. The company has established headquarters downtown, with branch offices in the principal suburbs, and proposes to run a line of four or more delivery 'buses at the start to carry package freight. This is the first attempt of the kind in Pittsburg.



ONE OF NEXT SEASON'S CARS. AEROCAR 20-H.P. RUNABOUT WITH AIR-COOLED MOTOR AND SIDE DOORS.

### PIERCE SIX-CYLINDER MOTOR.

While it cannot be denied that the six-cylinder automobile has provoked a great deal of argument pro and con, it is equally true that the smooth, vibrationless running of the best six-cylinder motors is productive of a great deal of enthusiasm on the part of those who drive them, with the result that the number of manufac-



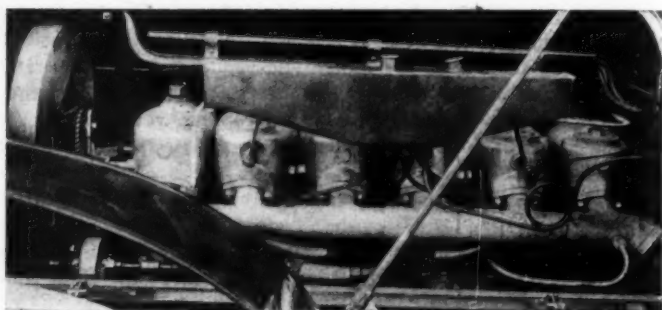
INLET SIDE OF PIERCE SIX-CYLINDER MOTOR.

turers turning their attention to six-cylinder automobiles is increasing. One of the recent producers of a motor of this type is the George N. Pierce Company, of Buffalo, N. Y., whose cars have won for themselves a reputation worth having, both at home and abroad. The Pierce six-cylinder motor is shown from both sides in the accompanying engravings. Rated at 50-60 horsepower, the engine shows no startling innovations in engineering practice, but embodies what the designer deemed best in modern methods of engine construction.

Each cylinder is a separate casting, with integral water jacket and head and valve chambers, the latter symmetrically disposed one on each side of the cylinder. Valves are all mechanically operated, there being a camshaft on each side enclosed in the crankcase. The intake pipes lead the gas to all the six cylinders

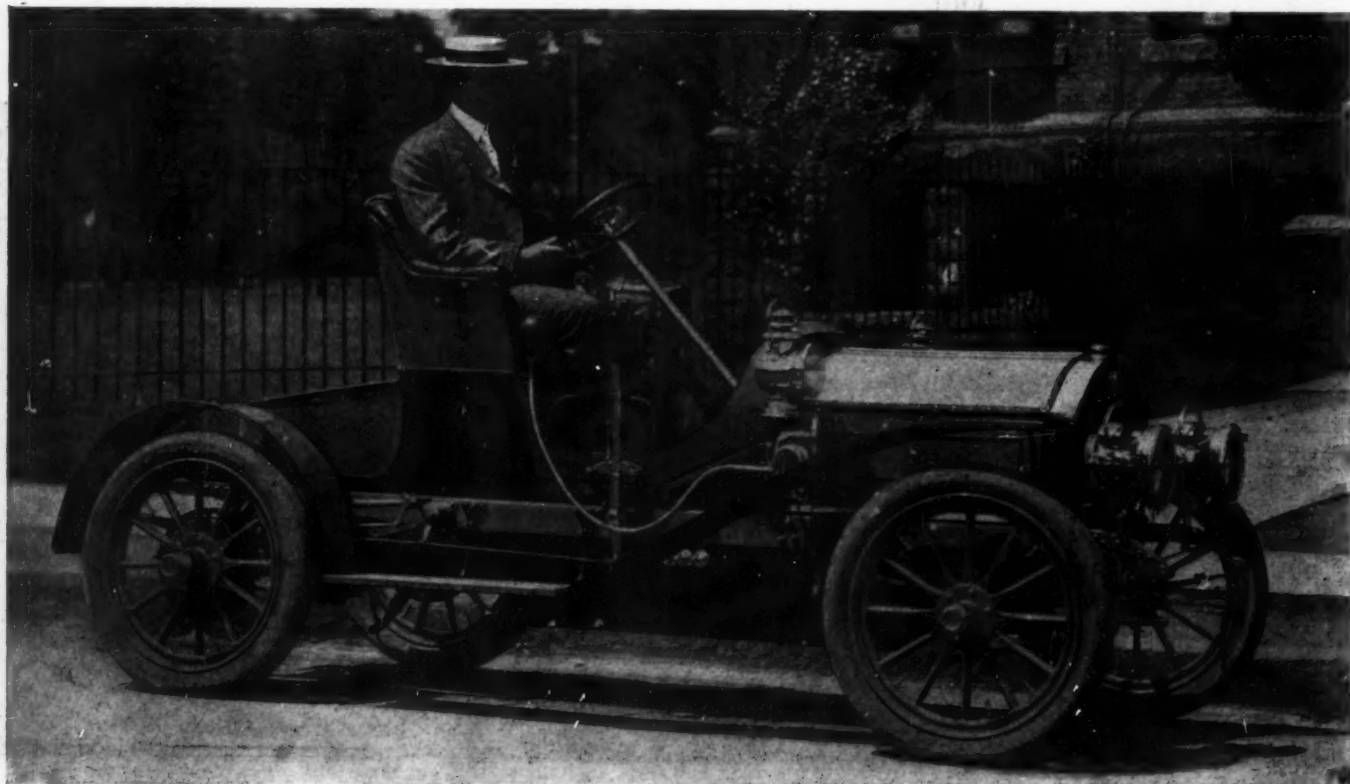
from a single carburetor placed at the center of the engine on the right-hand or inlet side; no attempt is made to equalize the distance between the carburetor and the various cylinders, but the pipes are of ample diameter and have easy bends. The exhaust pipe, on the left-hand side, is a single straight header into which short branches from the valves lead. The exhaust pipes also are of large diameter, giving the burnt gases an easy means of exit and obviating excessive back pressure on the pistons—a point which has a direct bearing on the power output of the motor.

Control of the spark and throttle is by a single lever, the throttle, incorporated in the carburetor, being connected with the timer by a rod so that the two move simultaneously. The high-tension wires carrying the current from the coils to the spark plugs are led through an insulating tube over the engine and brought out through holes above their respective plugs, thus avoiding a good deal of loose cable about the cylinders. The spindle of the rotary circulating pump is clutched to the forward end of the exhaust camshaft, and the fan behind the radiator is driven by a rope belt running from a pulley on the crankshaft.



VIEW OF PIERCE SIX-CYLINDER FROM EXHAUST SIDE.

Lubricating oil is carried in a large tank bracketed on the engine on the exhaust side. Being close to the motor, the heat from the cylinders keeps the oil thin enough to run freely through the leads, and keeps it at a temperature which is independent of the weather, so that the oil always feeds at the same rate.



PRESIDENT M. J. BUDLONG, OF THE ELECTRIC VEHICLE COMPANY, IN NEW 24-28-HORSEPOWER COLUMBIA RUNABOUT, IN FRONT OF THE HARTFORD FACTORY.

### A NOVEL CONVERTIBLE BODY.

One of the most widely-recognized needs of the new conveyance has been the lack of thoroughly practical and slightly convertible bodies, built to carry only two people under ordinary conditions, but capable, when the necessity arises, of comfortably seating two or three more.

In the new type of automobile body here illustrated for the first time, practically every advantage is provided in a manner that provides a new solution for this interesting problem. Convertibility is secured without complexity, without deviation from accepted standards in design, and without sacrifice of the occupant's comfort.

As is shown by the illustrations, the principle of the new body, which has been aptly styled "the Duplex" by the patentee, is so

hinges, so that, though they open outwards, they nevertheless can be swung inward, against the back of the front seat, so as to be concealed by the rear seat when it is moved forward. If rearward opening doors are called for, the use of separable hinges, in connection with simple supports on which to hang the doors when they are not required, provides for their concealment as readily as in the case of the other type.

The rear seat cushion, unless of the pneumatic type, must be built in three sections, to stow under the front seat, where it occupies less than one-third of the total space available. If a pneumatic cushion is used it can be in one piece, and will take only a negligible amount of room. The rear floor mat stows immediately against the doors, which is also true of the rear seat support.

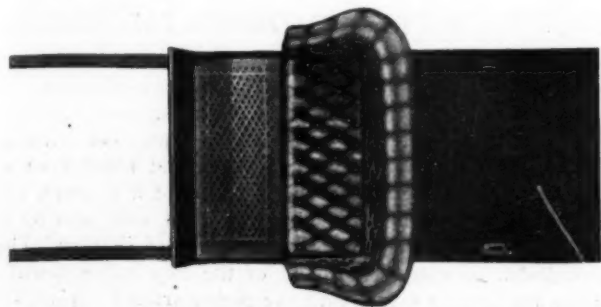


FIG. 1.—TOP VIEW OF DUPLEX BODY, CONDENSED

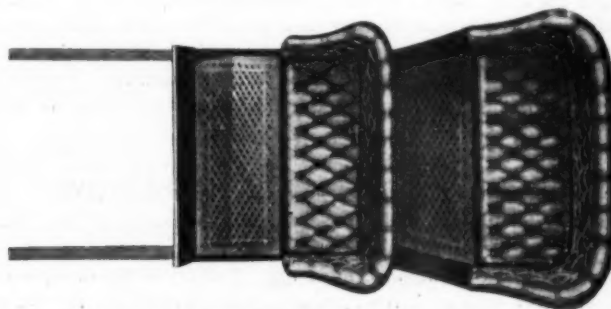


FIG. 3.—TOP VIEW OF DUPLEX BODY EXTENDED.



FIG. 2.—SIDE VIEW OF DUPLEX BODY, CONDENSED.



FIG. 4.—SIDE VIEW OF DUPLEX BODY, EXTENDED.

obvious that it truly is a wonder that no one thought of it before. Conceive an ordinary body with detachable rear—release it from the car, lift out the seat cushions, and—instead of removing it—simply slide it forward until it stows snugly around the front seat! That is all there is to the Duplex body.

By the use of pneumatic cushions for the back of the back seat, or by skimping the upholstery to the extent of making it rather thin at this point, even the double-roll effect to the edge of the

There are several features of merit in addition to those previously referred to. One of these is the fact that the rear seat is larger than the front seat, as all standard designs require that it should be. Another is that no restrictions are imposed upon individuality of design. In fact, the improvement amounts to an innovation in systems of body construction, rather than merely an advanced body design.

Although the new body is applicable to cars of all types, it is



FIG. 5.—FRONT VIEW OF FRONT SEAT.

(Compare size with that of rear seat.)

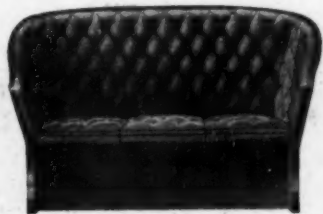


FIG. 6.—FRONT VIEW OF REAR SEAT.

(Compare size with that of front seat.)

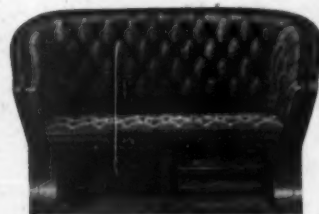


FIG. 7.—FRONT VIEW OF BOTH SEATS.

(Note storage of rear-seat cushion.)



FIG. 8.—REAR VIEW OF FRONT SEAT.

(Note scheme of storing doors.)

seat, as shown in Figs. 1, 3 and 7, can be absolutely done away with and the Duplex construction completely concealed, though it is a question at that whether its appearance is not more luxurious than objectionable.

Simple clamping devices, which can be operated by any one in a few minutes, hold the rear seat securely in both of the positions, at the same time permitting the storage of absolutely every part that is required for the body in its extended condition.

Not the least interesting feature of the whole construction consists in the provision for taking care of the side doors when the body is condensed. These are mounted on double-acting

expected that its chief utility will prevail in connection with vehicles of the runabout and semi-runabout character.

There is no doubt but what the purchaser of even the lightest type of runabout at times wishes to accommodate comfortably more passengers than the normal capacity of the vehicle contemplates, and is prepared to welcome any satisfactorily-concealed provision for making this possible, even though its utilization may involve temporarily a conscious overtax of rear tires. For the car of the next heavier class, which by every mechanical reason should be a runabout, but which for selling reasons must pass as a touring vehicle, the new body will be particularly desirable.

### PRESIDENT PAINE ON CAR CLASSIFICATION.

MINNEAPOLIS, MINN.—Asa Paine, vice-president of the Minneapolis Automobile Club, has been re-elected president of the Florida East Coast Automobile Association, which conducts the annual winter meet on the Daytona-Ormond beach course. The election is a tribute to the executive ability of Mr. Paine, who has shown great proficiency in the handling of the business affairs of the big winter tournament. Mr. Paine is now engaged in figuring out a system for the better classification of cars for racing to supersede the grading by weight system used last winter, which caused considerable dissatisfaction. He says: "In my opinion there should be a decided change in the system of classification for racing cars. For cars weighing under 1,500 pounds the weight classification is good enough. For cars over that weight the only way to properly and fairly classify is by cylinder displacement. Cylinder compression should be taken into consideration. Only one grade of gasoline should be used at race meets, and that should be furnished by the racing committee. Powerful engines in inadequate frames and running gear are bound to hurt the racing of cars for sport."

### FRICITION DRIVE CARS IN PARADE.

Among the Fourth of July festivities at Indianapolis, Ind., was a parade of decorated automobiles, and part of the parade is shown in the accompanying engraving. The car in the foreground is a Lambert friction drive machine, manufactured by the Buckeye Manufacturing Company, of Anderson, Ind., and carries a big cloth sign bearing a pictured representation of the simple-driving and speed-changing mechanism of the Lambert. The car is an excellent example of the success that follows persistent endeavor to surmount mechanical difficulties. The friction drive on this car is ideally simple, consisting of two disks, one driving and the other driven, the driven disk being moved to and fro across the face of the driving disk to obtain the changes of speed. With no gear teeth to strip off and none of the shocks inseparable from a positive drive gear brought suddenly into engagement, the Lambert car is an interesting machine. The road work of the machine has shown that the transmission has passed the doubtful stage and has, in the vernacular, made good.

The Chicago City Council has passed an ordinance allowing automobile dealers in the city to use the gasoline tanks previously placed in alleys without the city's consent.



DISPLAY OF LAMBERT FRICTION DRIVE CARS IN FOURTH OF JULY PARADE AT INDIANAPOLIS, IND.

### "ANTOINETTE" THE NOTABLE KIEL WINNER.

BERLIN, July 10.—The Kiel Motor Boat Regatta, the most prominent boating event arranged in Germany, did not draw a single foreign entry this season. The racing class event only brought two of the six entered vessels up to the mark, and of these the 160-horsepower Delahaye *Antoinette* won the 48 kilometers in 1 h. 13 min. 15 sec. In Class II, for racers of 18 to 25 meters, *Karin*, with its 400-horsepower motor, won, doing the 76 kilometers in 1 h. 34 min. 42 sec.

On June 30 only five boats started on the 120-kilometer race from Kiel to Pravemuende, owing to the state of the water, and of these two thought it wiser to get back into shelter as soon as possible. The *Karin* won in 4 h. 1 min. 30 sec.

### JOLIET TAKING TO THE COMMERCIAL VEHICLE.

JOLIET, ILL., July 16.—Merchants of this town are having good success in using power vehicles for the delivery of goods. One of the department stores is using a ten-horsepower Knox, and two Cadillacs are being used by a clothing firm. The latter firm tried one machine for nearly three years, and liked it so well that recently they have bought another and put it to work. One Olds machine has been fitted up for a paint firm, and by this means paints are delivered to a wide section of country. There is a well-defined movement in all of the Fox valley towns to supplant heavy dray teams with the power truck.

### HIS ENTIRE TIME TO J. S. BRETZ COMPANY.

J. S. Bretz, who has been the general manager of the Corbin Motor Vehicle Corporation, New Britain, Conn., has just severed his connection with that concern in order to give personal attention to the interests of the J. S. Bretz Company, importers of F. & S. Annular Ball Bearings and selling agents for Hartford universal joints and other automobile specialties.

E. H. Brandt, well known in automobile trade circles, at once will assume the position of sales manager of the Corbin Company.

A large bullet-proof automobile, ordered by the Russian emperor, has arrived in St. Petersburg and has been carefully examined by the minister of highways and communications. The machine has gasoline tanks of great capacity. It is intended to travel at a speed of eighty-five kilometers an hour.

## NEWS AND TRADE MISCELLANY.

A new factory for the Warner Gear Company, of Muncie, Ind., is well under way. It is the usual story of increasing business outgrowing its old plant.

The Oakes & Dow Company is now located at 15 Chardon street, Boston, with increased facilities for the manufacture of Comet and Sootless spark plugs.

The Continental tire manufacturers express much satisfaction over the fact that the three Brasiers which figured among the eleven finishers of the Grand Prix were equipped with Continentals.

Sievers & Erdman, of Detroit, a firm for thirty years engaged in building high-class carriages, have turned their attention to automobile bodies and are turning out some exceedingly fine work.

Harry S. Houpt, New York agent for the Thomas, has removed into his new store at Broadway and 63d street, where he now has one of the finest equipped sales-rooms in the metropolis.

William B. Kent, of Trenton, N. J., a prominent member of the Mercer County Automobile Association, has purchased a new six-cylinder Ford machine, and will use the same on extensive tours in the East.

A contract has been closed by the Hartford Suspension Company, of New York, with the J. Stevens Arms & Tool Company, of Chicopee Falls, Mass., to fit all Stevens-Duryea cars with Truffault-Hartford shock absorbers.

George Ehret, Jr., who owns one of the finest equipped private garages in New York City, has purchased a 28-35-horsepower Rossel chassis from the Rossel Company of America. He is having a touring body put on it and in the fall will convert it into a limousine car.

R. H. Cleveland has purchased the Capital City Garage, 32-36 Chancery street, Trenton, N. J., from Daniel Haverstick, and will continue the business under the same name, making a specialty of keeping on hand a full line of supplies and sundries.

Wayne cars were victors in the two-day endurance run, concluded at Los Angeles, Cal., June 30. A Model C Wayne had a perfect score, and another Model C had a half-minute adjustment. Two Model H's finished the run with no adjustments.

The Monarch Motor Car Company, of Chicago, has purchased in the town of Leyden, in the suburbs, a large factory formerly used by Siegel Cooper & Co. for the manufacture of department store products. The plant will be remodeled and converted into an up-to-date automobile factory.

State Road Commissioner Hutchinson, of New Jersey, has approved plans for macadamizing the Hammonton and Atsion road for a distance of six and a half miles, which will make a complete line of improved roads between Trenton and Atlantic City, except a distance of about three and a half miles from Atsion to Indian Mills, where the roads are in rather poor condition.

The American Ball Bearing Company, of Cleveland, has brought suit against the Olds Motor Works on a disputed account amounting to \$8,497, and has issued an attachment against the Auto Shop Company and Ralph R. Owen, agents for the Olds in Cleveland, subjecting

property or credits in their hands to a judgment.

Action has been filed against the Utah Automobile Company, of Salt Lake City, for the appointment of a receiver, by the B. F. Goodrich Company, Hartford Rubber Works Company, and the Warner Instrument Company. The defendant's place of business is 27 Market street, and it has been conducting an agency for several makes of cars.

The Detroit (Mich.) Sightseeing Company has been incorporated for the purpose of operating sightseeing autos. Two Rapid Vehicle cars, each capable of seating twenty people, will be installed as a starter, with more to be added if the business warrants. The company, capitalized at \$15,000, contains a score of prominent business and professional men.

Mexico is to have an automobile factory, according to Dr. Frank Lake, an American dentist at Guadalupe, who has been granted a concession for that purpose. The concession carries a grant of ten years' freedom from taxes, and provides for starting construction work on the building within six months. Experienced mechanics will be brought from the United States to operate the plant.

The Hawley Automobile Company has been organized at Constantine, Mich., and a factory for the manufacture of automobiles will be erected. William L. White is chairman, H. H. Riley vice-chairman, R. B. Hawley secretary and general manager, and William H. Barnard treasurer. Patents owned by Mr. Hawley will be utilized in the construction of the cars turned out by the new concern.

W. B. Johnson, of Essex Junction, the Vermont agent for the Buick automobile, recently sold a Model F Buick to parties in Burlington, who selected the machine on account of its adaptability to hill climbing. Mr. Johnson received two carloads of the Buick machines this spring, and has sold all but one, thus breaking all records for selling this season in that section. He has ordered the third carload.

The United States Government has taken delivery of a Franklin 20-horsepower Type D, through Cook & Stoddard, representing Franklin cars in Washington, D. C. An opportunity will be given the air-cooled car to demonstrate its ability and substantiate its claims during the army maneuvers at Mt. Gettysburg, Pa. This particular car has been purchased for use by the quartermaster's department.

At a recent meeting of the Southern Automobile Company, of Nashville, Tenn., the following officers were elected for the ensuing year: President and treasurer, Duncan F. Kenner; vice-president and general manager, Charles C. Coddington; auditor, Charles Gilbert; directors, W. J. Cummins and Jos. L. Yewell. The company is rapidly putting into shape for business its garage and sales-rooms, which were badly damaged by fire a few weeks ago.

The department foremen and office employees of the E. R. Thomas Motor Company, of Buffalo, N. Y., comprising a party of about 100, were recently given an outing down Niagara river as the guests of E. R. Thomas. The trip was

made on the steamer Argosy and consort Twentieth Century. Dinner was served on the boats. Stops were made at Edgewater and Eagle Park on Grand Island, where a number of games and athletic events were held.

Additions now being made to the plant of the Elmore Manufacturing Company, of Clyde, Ohio, will give that establishment more than double its present capacity. Three new buildings, each two stories high, are being erected. These buildings add more than twenty-two thousand square feet of floor space to the present extensive plant. One of the new buildings will be of concrete, and the other two of modern wood and iron construction.

The Metropolitan Insurance Company has purchased an automobile for the use of Special Agent Robert Meeker, of Illinois and Indiana. His errand will be to visit agents of the company, and by using the machine he can see many whom he would otherwise miss, owing to train connections. The company figures that there will be a saving of both time and money over train transportation especially in not waiting for connections, while the car can be used for the entertainment of country local agents and also for inspection, etc.

On June 22 the first tourist car to cross the Simplon Pass under its own power was a Packard, owned by Hiram W. Sibley, of Rochester, N. Y. It contained Mr. Sibley and his family, and in writing to a friend Mr. Sibley states that as soon as permission had been received from the authorities to cross, the Packard car sailed up and over the pass of 6,700 feet with the American, Swiss and Italian colors flying at the peak. Mr. Sibley since reaching the Continent has covered more than 2,000 miles over all kinds of roads.

The city of Cleveland is again increasing the number of machines in its municipal "stable." Some months ago, after most satisfactory results with a big Stearns touring car for its councilmen and heads of departments, the city bought four Reo cars for the street cleaning department and several of the inspectors in other departments. Now it is advertising for proposals for three more machines for the regular use of other heads of departments. Mayor Johnson, who is a most enthusiastic automobilist, wants the council to appropriate money enough to buy automobiles for the fire chiefs, for park police, others for the police department and motorcycles for the bicycle police.

President M. J. Budlong, of the Electric Vehicle Company, says that a sign of the times may be detected in the numerous requests for selling rights for Columbia cars which have recently come in from South American countries. He thinks that South America will ultimately develop into one of the most important markets for American cars. A great many Columbia electric cars are already in use in the principal cities of Brazil and the Argentine. Many inquiries have also been received this season from New Zealand, but up to the present time no actual sales have been reported. Speaking of the industry at large, it is still to be said that practically all of the American output is absorbed by the home demand, but there is no doubt that American makers will find the export field a very important one.

**NEW AGENCIES ESTABLISHED.**

The Mitchell Motor Company, of New York, has opened new salesrooms at 1787 Broadway.

John E. Smith, for many years identified with the carriage trade at Atlanta, Ga., has been appointed agent for the Reo in that city.

Fred H. Adams, 541 Tremont street, Boston, has been made agent for the Atlas gasoline trucks and commercial cars, manufactured by the Knox Motor Truck Company, Springfield, Mass.

C. H. Pingrey, of Bloomington, Ill., has been appointed agent for the Reo Motor Car Company, in that city, and has opened a store in the Eddy Building to handle the Reo line and a stock of automobile supplies.

Agency arrangements have been concluded by the Babcock Electric Carriage Company with the following firms: I. W. Dill Carriage Works, Harrisburg, Pa.; Mar-Del Mobile Company, Baltimore; Diamond Motor Car Company, Philadelphia; W. D. Hammill, Williamsport, Pa.

The Buffalo agency for the Aerocar Company, of Detroit, has been placed with C. A. Benjamin, of the Buffalo Automobile Station, 240 West Utica street, that city. Probably there is no better known man in the automobile industry than C. A. Benjamin, who has always been known to his friends as "The original live wire." Mr. Benjamin was for four years general sales manager of the H. H. Franklin Manufacturing Company, of Syracuse, an enthusiastic autoist, and a close follower of the air-cooled proposition from its inception. The news that he has taken up the retail end of the game, as a representative of the Aerocar, in conjunction with his other work as sales manager of the Babcock Electric Company, will be of interest to many.

**PERSONAL TRADE MENTION.**

C. A. Tileston, of the Renault Freres American agency, has sailed for France to visit the Renault factory.

The Matheson Company of New York has established a Philadelphia agency under the supervision of Cornelius Baker. Until a site is determined for salesrooms and garage, headquarters will be at the Bellevue-Stratford.

Richard Bacon, for some time salesman with George A. Crane & Co., of Chicago, agents for the Knox, has accepted a position with the McDuffie Automobile Company, of that city, agents for the Royal Tourist and Stoddard-Dayton cars.

C. A. Benjamin, secretary of the Babcock Electric Carriage Company, of Buffalo, accompanied by Mrs. Benjamin, are participating in the Glidden tour as guests of Mr. and Mrs. E. E. Kirk, sales manager of the E. R. Thomas Motor Company.

Walter A. Schott, for some time past connected with the Rose Manufacturing Company, of Philadelphia, has left its employ and is now with the Prest-O-Lite Company pushing the sale of Prest-O-Lite gas tanks and Prest-O-Tire tanks in Eastern territory.

S. A. Miles, general manager of the National Association of Automobile Manufacturers, has sailed for home, and will be at Bretton Woods, N. H., when the Glidden tour ends. Mr. Miles has been abroad for the past two months, visiting his mother in England, and making an automobile trip on the continent.

Announcement is made that James Couzens, who has acted as secretary and business manager of the Ford Motor Company since its inception, succeeds A. Y. Malcomson as treasurer and director, the positions of secretary and treasurer being combined. It is understood Henry Ford acquired the Malcomson stock. Mr. Malcomson will devote his time to building up the Aerocar Company, in which he is heavily interested.

Dustin Farnum, the well known star of "The Virginian," has just bought a new Maxwell four-cylinder, in which he intends to travel between the cities where his troupe is playing the coming season. Last summer during his vacation Mr. Farnum used a Model H of same make. With the little car he covered about 4,000 miles in New Brunswick and Nova Scotia. His repair bill for the whole journey amounted to the sum of 24 cents. He never had a puncture.

P. E. Hawley, for the past year manager of the Detroit branch of Continental Caoutchouc Company, has resigned his position with that company and will hereafter be identified with the Brandenburg Company of Chicago, New York and Detroit, Manufacturers' Sales Agents. This firm is composed of George G. Brandenburg, J. I. Brandenburg, F. E. Moskovics and P. E. Hawley. Mr. Hawley also retains his position as president of The Automobile Equipment Company in Detroit.

Col. James H. Sprague, celebrated the Fourth of July by holding a reception in the offices of his big canopy and umbrella factory on East Main street, Norwalk, O., from 2 until 6 o'clock in the afternoon. Several years ago Col. Sprague established the custom of receiving his friends on the country's birthday, and the receptions have become a permanent fixture in the calendar. The handsome offices were appropriately decorated and tables were spread for the luncheon, which was served with the colonel's usual lavish hospitality, while an orchestra played patriotic airs. Souvenirs consisting of miniature valises of celluloid, on the sides of which were inscribed the date and event, were presented to each guest.

On account of the death of his son, H. E. Randolph has resigned the offices of secretary and assistant treasurer of the Maxwell-Briscoe Motor Company. Mr. Randolph was deeply affected by the loss of his son, and decided to leave Tarrytown, which necessitated severing his active connection with the Maxwell-Briscoe concern. His resignation was accepted with great regret, as he was one of the incorporators of the company, and had been with it since it began business. In all probability he will take charge of the Kelsey Suspension Company, and open an office in New York City. Mr. Frank Dorman, recently assistant to the manager of the Maxwell-Briscoe Motor Company, has succeeded Mr. Randolph as secretary.

Herman F. Ball, for the past three years superintendent of motive power of the Lake Shore & Michigan Southern Railroad Company, which has its headquarters in Cleveland, has tendered his resignation, to accept the vice-presidency of the American Locomotive Company. He will be the executive head of the new automobile branch of the company, known as the American Locomotive Automobile Company, which has erected a large plant at Providence, R. I. It is

understood that the company will devote considerable attention to the manufacture of gasoline cars for railroad service. Mr. Ball has been deeply interested in this work, having paid a great deal of attention to the development of the gasoline cars being built for the Lake Shore Company.

**DEATH OF JOHN SIMPSON GRAY.**

John Simpson Gray, president of the Ford Motor Company, and one of Detroit's foremost business men, died of heart trouble at his home in that city, July 6. Mr. Gray was a high type of the American business man, and was prominently connected with a number of Detroit's industries. In addition to being president of the Ford Motor Company, he was president of the German-American Bank and a director of the Detroit Trust Company; vice-president of the National Candy Company; a director of the Detroit Photographic Company, and the Norris Kollar & Kuff Company, besides having financial interests in many other mercantile enterprises. Mr. Gray was born at Edinburgh, Scotland, October 5, 1841, and came to this country with his parents at the age of eight. When he was eighteen he taught school during the winter at Algonac, Mich., and the following spring entered his father's business as a toy merchant, and this marked the beginning of his successful business career. In 1861 the toy business was sold, and a partnership was formed with C. Pelgrim & Co., under the name of Pelgrim, Gray & Co., for the manufacture of candy. This business increased until it was sold in 1903 to the National Candy Company, of which Mr. Gray became the vice-president. He was a deep thinker and reader and traveled a great deal during the latter part of his life. For several years he was president of the Detroit library commission. He was a man of deep religious convictions and prominent in church work, doing whatever he attempted with much energy and without flinching. He found time to do many things in his busy life, and he did them all well.

**RECENT INCORPORATIONS.**

Union Automobile Company, Brooklyn, N. Y.; capital, \$15,000. Directors, H. G. Kaufnisky, M. Finkelstein and S. Barnett.

Whiting Motor Company, Jackson, Mich.; capital, \$500,000. Incorporators, J. H. Whitney, W. C. Durant and Charles M. Begole.

Federal Automobile Company, Chicago; capital, \$25,000. Incorporators, Albert Buchner, Edward P. Richter and James J. Waters.

Petroleum Automobile Engine Company, Millbrook, N. Y.; capital, \$250,000. Directors, N. E. Batjeman, A. H. Bissell and J. W. Bain.

Model Garage Company, Chicago; capital, \$20,000. To deal in automobiles. Incorporators, John N. Williams, Clarence W. Williams, Charles L. Tindolph.

American Automobile Company, Pittsburg, Pa.; capital stock, \$50,000. Directors, L. C. Myers, Pittsburg; M. S. Simms, L. C. Myers, George Eckert, S. A. Dickie, H. S. Stewart, Pittsburg.

Eagle Garage and Machine Company, New York. To manufacture and deal in motors and other machinery; capital, \$20,000. Incorporators, Wilbur S. Scudder, Ernest B. Barber, John C. Scudder, Francis W. Qualie, George E. Townsend.

## INFORMATION FOR BUYERS.

**CONDENSED ACETYLENE GAS.**—The big searchlights that are now commonly used on automobiles for night driving require a copious and steady supply of acetylene gas, and if the light is to be kept clear and the burners clean the gas must be pure and dry. With a view to supplying clean, dry gas without the use of generators on the car, tanks of compressed acetylene gas have been placed on the market. These tanks have only to be piped to the lamps, when the simple turning of a cock will permit the gas to flow to the lamps. Such tanks are made and filled by the Avery Portable Lighting Company, of 20 Martin street, Milwaukee, Wis. The Avery tanks or, as they are called by the manufacturers, the Autogas tanks, are pressed from seamless steel and are either nickel or cop-

ing the proper proportions—an important matter in the appearance of the car. Domestic and imported waterproof covering, cloths, pantasote, and leather are used; bows are of second growth ash and leather-covered sockets of steel. Straps are of the best harness leather, hand sewed, and the brass buckles and snaps are imported. Slip covers for the upholstered work are also made to fit, and may be of any desired color of waterproof cloth, bound with leather.

**SMALL ELECTRIC DRILLS.**—An extremely interesting line of small electrically driven drills and grinders is shown in a circular issued by the United States Electrical Tool Company, of West Eighth street, Cincinnati, O. The most elaborate tool is a small bench drill-press with the motor placed on top with its shaft horizontal and driving the drill spindle through a friction wheel that can be shifted to give any desired speed within the range of the disks. The drilling capacity of the tool is up to 3-8 inch. There is a quick feed, handy for small work, and the drill spindle is counterbalanced by a weight in the hollow column. Another tool is a grinder, which consists of a small motor with an emery wheel 4 1-2 inches in diameter attached direct to the spindle; the motor is mounted on a shank which is intended to be held in the toolpost of a lathe; a carriage and lead screw give the motor a travel of three inches on its own base. For internal grinding there is a shaft extension. For plain hand-drilling the company makes small motors with drill chucks on the spindles; these range in capacity from 1-4 inch to 7-8 inch and are simple and compact. Cable and plugs are supplied for making connections with ordinary incandescent lighting sockets. One of the direct current motors has a variable speed gear. Some of the motors can be had for alternating current, but these are of less capacity than the direct current machines.

**NEW GEECEE BATTERIES.**—In order to supply a storage battery that can be used in the place of the dry batteries in the Franklin "Gentleman's Roadster," the Rambler and the Union cars, the Royal Battery Company, of 143 Chambers street, New York, manufacturer of the Geecee battery, has placed on the market the battery illustrated herewith, which fits into the battery boxes of the cars mentioned, taking the place of dry cells. The batteries are long and narrow and are specially

adapted to cars where space is at a premium; they can, of course, be used in other cars besides those mentioned.

**BALL-BEARING LOZIER.**—Ball bearings are used to an unusual extent in the cars manufactured by the Lozier Motor Company, of Fifty-fifth street and Broadway, New York, and the builders state that the resulting efficiency is high. Hess-Bright ball bearings are used in every bearing of the transmission and the wheels. Easy running is facilitated also by the placing of two universal joints between the clutch and the transmission, so that binding is impossible. A Lozier 40-horsepower car in the two-gallon efficiency contest recently held in New York made a run of 30.28 miles carrying 7 passengers; the total weight of car and passengers was 4,490 pounds. The builders attribute much of the efficiency of the car to the liberal use of ball bearings.

### TRADE PUBLICATIONS.

**POPE MOTOR CAR COMPANY, WAVERLEY DEPARTMENT, INDIANAPOLIS, IND.**—Pamphlet illustrating and briefly describing the Pope-Waverley electric commercial vehicles.

**MOTOR CAR COMPANY, DETROIT, MICH.**—Pamphlet illustrating and briefly describing the Carter car, a friction-driven automobile.

**YORK MOTOR CAR COMPANY, INC., YORK, PA.**—Illustrated catalogue of the Pullman gasoline cars for 1906, with four-cylinder, vertical water-cooled motors of 24-28 horsepower.

**NILES-BEMENT-POND COMPANY, NEW YORK.**—List No. 12 of second-hand metal working machinery, describing a wide variety of machine tools.

**DODGE MANUFACTURING COMPANY, MISHAWAKA, IND.**—"Power Transmission" for June. This is a practical pamphlet for practical readers, issued in the interests of the Dodge wood-split pulleys and other power specialties.

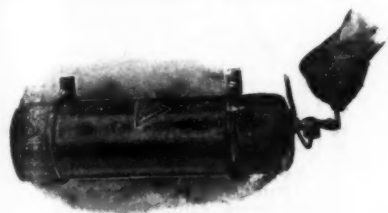
**SWINEHART CLINCHER TIRE AND RUBBER COMPANY, AKRON, O.**—New catalogue of the Swinehart solid clincher tires, describing and illustrating the tires, their fastenings and appliances for placing them on rims.

**HANKSCRAFT, MADISON, WIS.**—Handsome illustrated catalogue describing the special type of power boat manufactured by this concern, with concealed machinery, known as the Hanksraft. The catalogue is of interest to all motor boatmen.

**LANDIS TOOL COMPANY, WAYNESBORO, PA.**—This concern issues an unusually good illustrated catalogue of all kinds of grinding machines, many of which are illustrated by line drawings, showing the construction in detail. A number of the Landis machines are made with special reference to their use in making automobile parts.

**THE ROSSEL COMPANY OF AMERICA, KNICKERBOCKER BUILDING, NEW YORK.**—Catalogue illustrating and describing the Rossel car, manufactured by F. Rossel & Cie., of France, and for which the American company is sole importer for the United States and Canada.

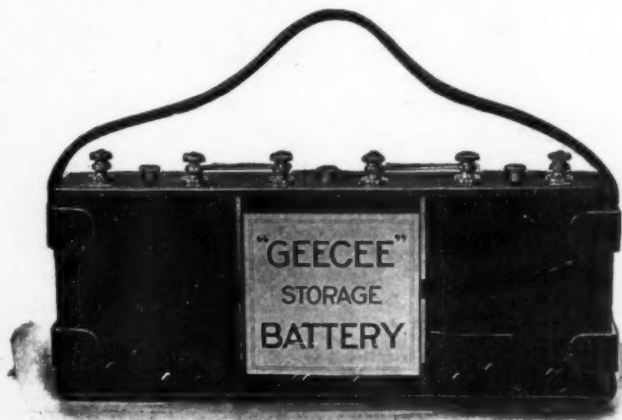
**H. H. FRANKLIN MANUFACTURING COMPANY, SYRACUSE, N. Y.**—"Eighty-seven Miles on Two Gallons of Gasoline," an interesting pamphlet describing the run of the Franklin car in winning the gold cup in the Two-Gallon Efficiency Contest in New York. The front page bears an illustration of the beautiful gold trophy.



AUTOGAS ACETYLENE TANK.

per plated. Bands are supplied for attaching the tanks to cars. In one end of the tank is a deep recess, in which is placed a pressure gauge, showing the automobilist just what pressure of gas he has remaining in the tank at any time. When a tank is empty it can be recharged at a reasonable expense. The manufacturers state that the tanks will hold gas for months without loss. Among the advantages claimed for the Autogas tanks are immunity from freezing, no carbide or water to be carried, no clogging or cleaning of burners, no waste, and no smell of escaping gas, light obtained at any time by turning a tap, as in a house gas fixture, and so on. As many lights as desired may be run from the same tank, the only difference being that the supply will of course be used up more rapidly the more lamps are connected up.

**SPECIAL TOPS.**—Believing that the best results are to be obtained by making tops specially to fit the cars they are intended for, the Crescent Auto Top Company, of 58 West Forty-third street, New York, makes all its tops in this way, this insur-



NEW SPECIAL GEECEE STORAGE BATTERY.

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